THE BUILDER

A Journal for the Architect & Constructor

MARCH 9, 1928 — No. 4440

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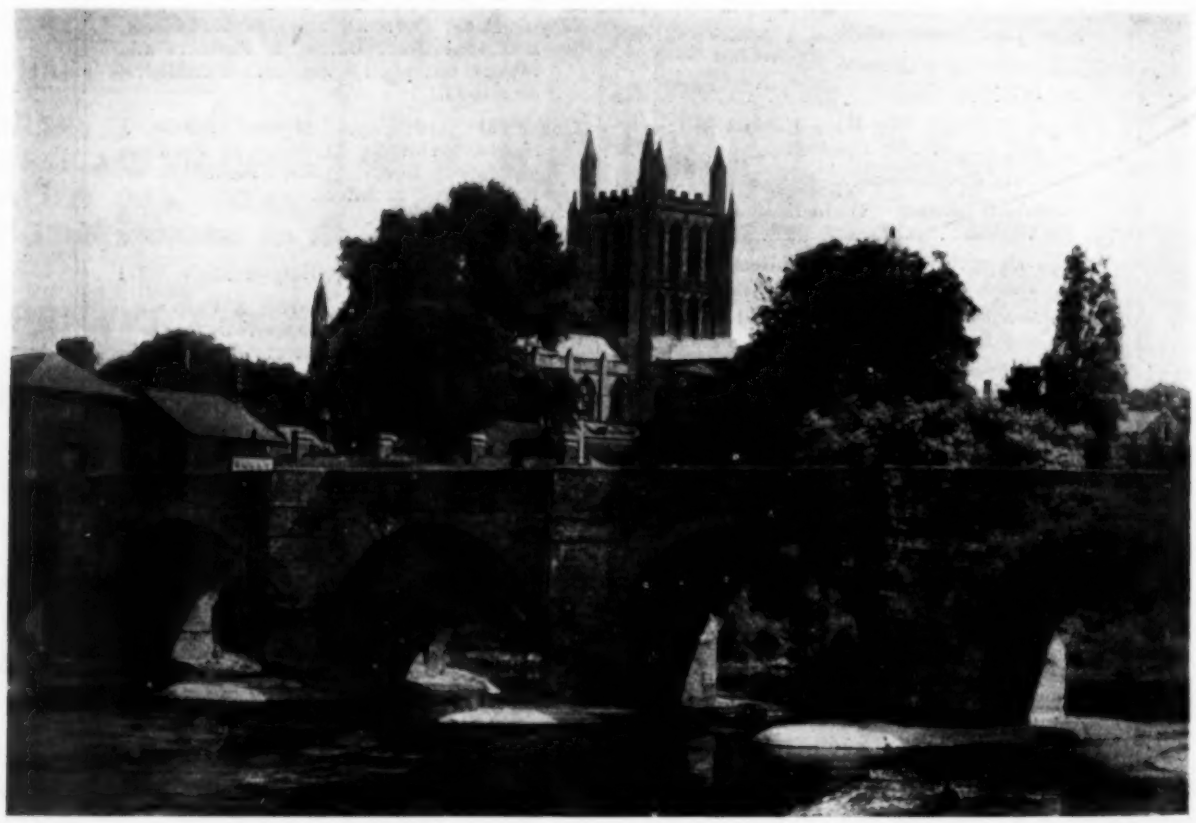
86TH YEAR

ST. IVES.



WYE BRIDGE, HEREFORD.

Two English Mediæval Bridges.

(*See page* 408)

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXIV. No. 4440 MARCH 9, 1928.

THE REGISTRATION BILL IN PARLIAMENT

As will be seen from the report we give elsewhere, the second reading of the Architects (Registration) Bill was moved in the House of Commons on Friday last week, and after a debate lasting two hours, what is called a "count out" took place, the 40 members of Parliament necessary to make a quorum not being present and the House was adjourned. The Bill, therefore, was for the time being "killed" by a method which can scarcely be called satisfactory, and we understand that it cannot make further progress this session. We do not know the intentions of the Royal Institute of British Architects and whether they will desire to proceed with the Bill, but in view of the opposition of Parliament not only to the much more comprehensive proposals contained in the Bill introduced last year but to the Bill of this year, the modest character of which can be seen from the text which we published last week, we shall not be surprised if they decide to drop it in its present form altogether, and if they do, disappointing though this would be to those who have devoted so much time and effort to obtain for the profession registration by Act of Parliament—for which there is undoubtedly a widespread desire—we believe there would be an equally widespread belief that the Bill which has just been counted out does so little to satisfy the profession that failure to obtain acceptance for its very modest proposals is not an unqualified misfortune.

The debate in the House of Commons on the second reading of the Bill introduced last year made clear the fact that Parliament will not agree to the registration of the title "architect," and, this being so, the promoters of the present Bill substituted the words "registered architect" with a penalty clause for the use of such title by any but the registered practitioner. This is practically all that the Bill would have given the profession, and it cannot be said, bearing in mind how much has been expected from a Registration Act, that it was lacking in moderation; in fact, we doubt whether, had a referendum been taken, the Bill would have been supported by the profession—certainly not unless the promoters had given adequate explanations of their aims and objects and reasons why—and we have no doubt the reasons were entirely satisfactory—so little could be included in the Bill to satisfy the profession with any hope of surviving the searching criticism to be expected from Parliament.

In our issue of the 24th ult., we made some comments on the position, though without the text of the Bill before us, and we expressed the belief that the larger hopes of Registrationists were to a great extent Utopian; and though our support has been given to the Institute in its registration policy, we have done so with a conviction that those larger hopes would be frustrated by Parliament. Moreover, we have always doubted whether the promoters have ever sufficiently explained their registration aims to those who were really anxious to understand them. No one can doubt that the R.I.B.A. has made great efforts to carry out the wishes of the majority of their members and has honourably fulfilled the undertaking to promote a Registration Bill with all the means at their disposal, but after the Commons' debate last year and the evidence given before the Select Committee on the first Bill and with a knowledge of the various interests in opposition to them and the concessions which would be necessary to make the Bill acceptable to Parliament, the Institute would, in our opinion, have been well advised had they taken the profession more fully into their confidence. Had this been done, some at least of the criticisms urged against the Bill in Parliament, even had it been introduced in its emasculated form, could not have been made, and we should have heard nothing of the suggestion that the Institute's proposals would not be accepted by the profession.

There was very little in the debate that can be considered satisfactory either to the R.I.B.A. or the profession. Since the Institute took the matter of registration in hand, much labour has been expended on the preparation of the Bill to be presented, and although the second reading debate last year gave rise to some interesting speeches in a moderately full House, the debate on Friday took place before a small and seemingly apathetic body of members. We have always believed that a Registration Bill about which there was any sort of suggestion that it had for its sole or principal object the welfare of the profession, must fail to convince such a body as our present-day Parliaments, and we are afraid the intentions of the promoters were somewhat doubted. Needless to say the claim was made that the real purpose of the Bill was the protection of the public against unqualified or partially qualified architects, but the Bill itself did not appear to satisfy members on this point, especially as they were told by those who were supposed to know all about the matter that "the Bill was futile and useless, did not help the community, and did not help the architect"; it has certainly been the hope of registrationists, almost without exception, that registration by Act of Parliament would be a protection and help to the public, and it would be unfair to question the sincerity of their belief because they have been looking to a Registration Act to benefit themselves as well. We have great sympathy for men who have received a sound architectural training who find themselves in competition with the untrained man who is able to call himself architect, and we hope it may be possible for the Royal Institute of British Architects next session or some time or other to get a Bill through Parliament that will secure the fuller recognition of the qualified architect; and with the experience gained in the promotion of the two Bills they have promoted, they should be in a better position to know what is possible, though we hope some of the bodies included in the second schedule of the present Bill will be omitted in any future proposals.

In the circumstances, we think it well to conclude these remarks with the observations we made in our issue of February 24, which are perhaps even more pertinent to the issue now than when written.

"The history of the registration movement is filled with pages of strife and discord, in which the great schism which created the Society of Architects stands out as a tragic episode. For many years the regulated conduct of the profession was divided between two parallel institutions, and few would claim that anything but harm resulted while such a state of affairs maintained. In more recent years the two bodies converged towards cordial co-operation, culminating in the recent amalgamation. There are again fewer who would regret this outcome. Let them, however, make sure that they hold what has been gained, and that they do not head once more towards a disruption that would be more final than any they have yet suffered. Let them above all be loyal to the men who have given their time and energies to the good of the profession, and whom they have authorised to guard their interests and improve their status."

NOTES

"Safety First" for the New Sacristy.

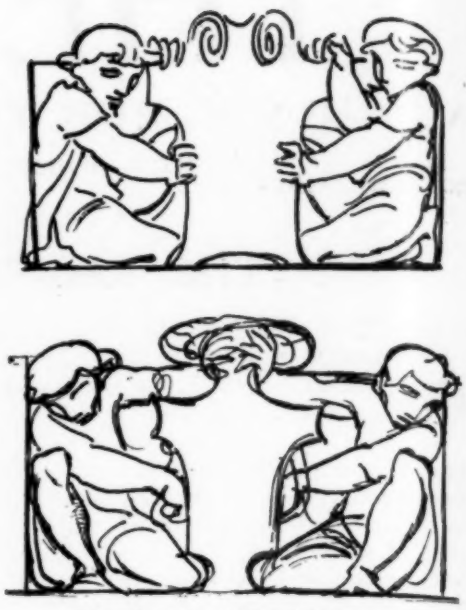
In the letter on the new Sacristy which Mr. C. F. A. Voysey contributes to the *Times*, he refers to the assumption that tracery is objectionable because it prevents adequate lighting and that to execute the building in the Gothic spirit would involve copying the old building. The writer shows the fallacy that any such consequences are inevitable, and that to approach the subject with so many timorous provisos of the "safety first" order savours more of the cowardly caution of which Samuel Johnson once spoke. Why should the architect have thus to efface himself, and why should the Abbey, with its noble traditions of building, be so badly served? The examples of its own variety or treatment suggests a bolder course. The spirit of Gothic is not dead, because it is of all time. The Abbey points to the very opposite of this self effacing and negative approach in its own constantly changing variety. The purpose we are told is deliberately to avoid the Gothic style, which would appear to show that there was nothing left but to imitate it. But the freedom of Gothic lies in just the opposite of this, for its varieties are so great as to be almost endless. We really much hope the matter will be reconsidered and raised above an approach so conventional and so injurious to the Abbey.

The Spirit of Gothic.

There is a further statement on this subject in Mr. Voysey's letter so illuminating that we may repeat it here. "Compare," says the writer, "the detail that is possible in Gothic work with the sparse, hackneyed, foreign details of the modern English Renaissance, and we find twenty Gothic varieties to one of Classic. Moreover, think of the human and animal motives seen in and outside our cathedrals. No Gothic carver delighted in the skulls of oxen. It was the living beast he loved, the thoughtful man, the angel messenger, and all living emotions. He delighted not in broken pediments." Is it because the modern Renaissance is so much more limited, so much less vital and personal in its feeling that we have fallen back on this, which makes so much less demand on us, as all we have to offer? It is no doubt much easier, for as the writer says: "Text books will give you rules for all the parts and proportions of the Classic, but Gothic is much too complex and subtle." To put it another way, is it not that the Gothic spirit emerges from deeper services, strikes deeper into life and nature than the former, which can be content with the outer shell "and leave the preparation of the plans to others?" Surely it is not the greater complexity of Gothic that leads us to avoid it so much as the outlook which is required for it; so different from the hurried restlessness for merely ephemeral results to-day. Mr. Voysey has never written anything more appropriate and vital to current issues than this letter to the *Times* on the attributes of Gothic architecture.

Our Ancient Bridges.

Mr. G. H. Jack's very interesting paper on "Ancient Bridges," read before Monday evening's meeting of the R.I.B.A., and reported on page 408, evoked the enthusiasm of a large and keenly appreciative audience, as much for the fine series of views of our beautiful old bridges which were shown upon the screen as for the lecturer's informative historical survey of the subject, and for his account of the methods of preservation which he has adopted in his own county of Herefordshire. Mr. Jack made it clear that many of our old bridges, apparently beyond repair, may, by the adoption of right methods of conservation, be restored to a perfect state of efficiency and given a new lease of useful life. He made equally clear his disbelief in what is widely regarded as the necessity for widening, or even rebuilding, our old bridges to bring them into conformity with the needs of modern mechanical transport. The craze for "modernising" our ancient bridges has been allowed far too much latitude and it is time to call a halt. It was pleasing to hear from Sir Henry Maybury, Director General of Roads, Ministry of Transport, that more and more old bridges are being scheduled for preservation, and that Mr. Jack's methods of conservation have been brought to the attention of county surveyors all over the country. While on the subject of bridges, it may be of interest to remind our readers of the series of articles on "The Story of the Bridge," by Mr. Walter Shaw Sparrow, which began in our issue for August 11th, 1911.



Sketches by Alfred Stevens.
(From the R.I.B.A. Exhibition.)

Balgownie Bridge, Aberdeen.
See page 408.

Exhibition of Early English Needlework and Furniture.

A remarkable exhibition of old needlework and furniture is on view at Sir Philip Sassoon's house, 25, Park Lane, in aid of the funds of the Royal Northern Hospital, of which Sir Philip is the hon. treasurer. Specimens have been loaned from some of the finest collections in the country, including Arundel Castle, Hardwicke, Knowle, and from the celebrated collection of Mr Percival D. Griffiths and others. The exhibits cover a long period, ranging from the 16th to the 18th century, and the work is diverse in character, from the finest specimens of ecclesiastical and historic to the simpler domestic. In the age of hustle it is interesting to dwell on and admire the infinite patience, skill and art displayed on these now priceless pieces—so fine are they that it is almost impossible to select any particular piece

for special mention, consisting, as they do, of some 573 lots.

Some of the Exhibits.

The beautiful colouring of the silks, now perhaps faded by time, harmonise perfectly with the superb specimens of old walnut furniture there. Specimens making individual appeal to us are: No. 25, a prayer book with blue satin binding, with miniatures of Charles II. and Catherine of Braganza in a design of silver and pearl. No. 35, a Persian falconer's accoutrements of the 17th century, once the property of one of the old rulers of Persia. No. 184, bag of the Great Seal of Cromwell's Parliament, having the Arms of England stamped and enriched with bullions, and embroidered with a scene of the Long Parliament, with Speaker Lenthall in the chair. This scene is believed to be a replica of the design on the Great Seal at this time. Lent by Lord Bathurst. Amongst the remarkable walnut furniture may be mentioned No. 430, a Queen Anne walnut wing armchair, covered with needlework of the period, of floral design with panels of figures. Another, No. 437, a Queen Anne elbow chair, the seat and back covered in petit point needlework with baskets of flowers in naturalistic colours on a red ground. No. 462, a William and Mary winged armchair. No. 502, a Queen Anne walnut settee, a piece of unusual character. In addition, amongst the exhibits are some remarkable Chippendale pieces. The exhibition will be open to the public up to and including Sunday from 11 to 7 p.m. It should be visited by all those who have a love for beautiful things of the past—an opportunity may not occur again to see such a fine collection.

Rushes and Reeds.

The appeal published lately for a search for beds of unused rushes has brought many letters from all over the country to the Rural Industries Bureau. But unfortunately many of those who have joined in the search do not realise the distinction between *rushes* and *reeds*. The fresh-water rushes needed by plaiters are of the same nature as these field rushes—green, pithy and pliable—but are much thicker and longer, and grow in running water. Reeds, on the other hand, are stiff and woody—excellent for making a thatch that will last for sixty or seventy years, but useless for plaiting. Evidently there are beds of them all over the country, of which no use is being made, for the beautiful reed thatch is only to be seen now in one or two districts. Architects and builders of small country houses and cottages might more generally consider the merits of this type of roofing, so characteristic of the English countryside.

Duck Bridge, Danby, Yorks.

A New Quarterly.

Architects cannot fail to be interested in the current number of the *Parthenon*, the journal of the Incorporated Association of Architects and Surveyors, the second issue of the second volume, for it contains some admirable illustrations of both old and new work, and articles of current moment. The format of this new quarterly is quite excellent.

Mechanical Works of Art.

With the advent of the Prince Consort there came, according to Mr. Roger Fry, the delightful dream that the finest works of art could be produced mechanically on so vast a scale that everyone might own a masterpiece. "It was false because it started from the assumption that people (even all the people) want works of art." He goes on to show that works of art that anyone can possess do not confer prestige, and are therefore useless. "Rarity, and the fact that other people want and cannot have the rare object that you possess, is essential to the whole business." There is some truth in this, but it is not the whole truth. We certainly have known those who, in buying the work of the craftsman, wanted to be certain that it could *not* be judged to be the work of the machine. They, too, wanted value for their money and deemed they had got it. We share a belief contrary to Mr. Fry's, that if the machine had reproduced works of art there would have been less ground for complaint. The machine has produced a mass of rubbish. People may not want works of art, and most boarding-house mantelpieces prove that there is some other appeal that we do not understand. Seven pairs we have counted—balanced on each side—of the usual china boots, cats, dogs and vases. Upon Mr. Guy Pocock's* mantelpiece in a little Welsh inn there stood two china dogs the size of spaniels. "'Where did they come from?' I asked my landlady. 'From Llanrwst,' she said. 'For many years I haf wished for togs to my mantelshelf, and when I married I haf pought them.' The two 'togs' were not in the least funny to her—why she bought them I cannot conceive," concludes Mr. Pocock.

Monnow Bridge, Monmouth.

Exits in Case of Fire.

How appalling are the conditions which exist amongst us was illustrated at an inquest the other day held by Dr. Waldo, J.P., the senior coroner for London, on the death from burns of an old man in a house which had eighteen residents and no roof exits. Under the London Building Acts Amendment Act of 1905 provision was made for special exits in case of fire, but this Act does not appear to be fully used. We cannot help feeling that some active inquiry should be made into this matter.

*"The Little Room," by Guy Pocock.

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GENERAL NEWS

New R.A. Elected.

The Secretary of the Royal Academy of Arts states that at a general assembly of Academicians and Associates held on February 28, Mr. Charles Ricketts, A.R.A., Painter, was elected a Royal Academician.

Structural Engineers' Annual Dinner.

The Marquess of Londonderry, K.G., has accepted an invitation to be the principal guest at the Annual Dinner of the Institution of Structural Engineers, which is to be held at the Park-lane Hotel, W.1, on Monday, March 26.

New Library Buildings, Cambridge.

The Senate of the University recommends a commencement of building operations upon a large group of library buildings on a seven-acre site forming part of the playing fields of King's and Clare Colleges. The cost is estimated at £500,000, and provisional plans have been prepared by Sir Giles Gilbert Scott, R.A.

Exhibition of Architects' Working Drawings.

An exhibition of Architects' Working Drawings will be held in the R.I.B.A. Galleries from March 12 to 24, 1928, inclusive. The exhibition will be open daily between the hours of 10 a.m. and 8 p.m. (Saturdays 5 p.m.), and will include drawings lent by Messrs. J. L. Ball, James Miller, Robert Atkinson, and Louis de Soissons. The exhibition is intended primarily for students of architecture; they will be able to examine the drawings that a practising architect hands to a contractor, and thus will be afforded an insight into the methods adopted in a modern architect's office. A special students' evening will be held at the exhibition on Wednesday, March 14, 1928, at 8.30 p.m. All students are cordially invited to attend.

Westminster Abbey: New Sacristy.

An anonymous donor has made it possible for the Dean and Chapter of Westminster to carry out a long-matured plan for the building of a sacristy to meet a growing necessity of the Abbey. After a careful survey of all the possible sites the ground immediately east of the North Transept has been chosen—a site largely screened from view by the Transept itself, by St. Margaret's Church, and by trees in the precinct. As a preliminary step, a temporary structure will be erected to test the general effect. The architect is Mr. Walter Tapper, P.R.I.B.A.

OBITUARY

The following obituary notices are condensed from the current issue of the *R.I.B.A. Journal*. Sir Henry Tanner writes:—

James Osborne Smith, F.R.I.B.A.

"By the passing of James Osborne Smith, on January 29, 1928, at the age of 80, the Institute has lost one of its oldest members, as he was elected an Associate in 1881 and Fellow in 1891. . . .He was born at Thetford in 1847, articled to John Brown, of Norwich, came to London, and for some years assisted Mr. J. K. Colling in the preparation and illustration of his architectural books; he then entered the office of Mr. Medland at Gloucester, subsequently returning to London, and in 1885 commenced practice on his own account, and for a while was engaged by the Office of Works in the preparation of drawings, etc., for the fitting up of the new Natural History Museum.

"His practice had a trend towards educational buildings and sanitary works. . . . He was continuously engaged by the Girls' Public Day School Company, for whom he built new schools at Sheffield, Notting Hill, Clapham, Wimbledon, Portsmouth, Dover, Streatham, etc., besides carrying out numerous additions, alterations, sanitary works, etc., at other schools. This connection led to the erection of Training Colleges at Isleworth, Saffron Walden, Stockwell, the Maria Grey College at Brondesbury; Grammar Schools at Skipton, Mansfield, Thetford, Caversham, etc.; sanitary works at the North-Eastern County School, Barnard Castle, Shrewsbury School, etc. He was surveyor to Harrow school for a number of years, and during that time erected new Science Schools and made additions and alterations to other buildings.

"He was employed to reconstruct the London Library, and more recently to add to it, including the internal fittings for the books, refitting in part the Bodleian Library, and the erection and fitting up of a library for Trinity College, Oxford, a work only recently completed. . . ."

Herbert Hodgson, A.R.I.B.A.

Mr. H. Hodgson, at one time member of the Society of Architects, spent many years in architecture in general practice, lecturing and coaching (for the various examinations) in Bradford, Yorkshire, of which county he was a native. In 1913 he, with his wife and family, went to Victoria, B.C., Canada. In 1923 he left Canada for the United States, going to Los Angeles, California, where he was employed in architectural work until his death, which occurred suddenly on December 24, 1927. He was elected A.R.I.B.A. in 1888.

Alfred Steinthal, F.R.I.B.A.

The death occurred on January 22 of Mr. Alfred Steinthal, of Wyncote, Bramhall. The son of the late Mr. H. M. Steinthal, he was educated at Clifton, Owens College, Stuttgart, and London, and took up the career of an architect and was elected F.R.I.B.A. in 1906. He was well known in Manchester as the designer of the Crematorium, though he specialised on the interiors of private houses. He was at one time a partner in the firm of Salomons and Steinthal, but during his latter years he worked alone. He was sixty-eight years of age.

Chev. A. Vassallo, F.R.I.B.A.

Chev. A. Vassallo died at Malta towards the end of January, at the age of 72. He was responsible for the erection at Malta of many important buildings, such as the Princess Melita Theatre at Sliema (now demolished), the demolition and rebuilding of the monument to Sir Alexander Ball at the Lower Barracca (copy of drawings consigned to the P.W.D. for preservation), the first block of stables in Marsa Ditch, the three skew bridges of the Malta Railway, the Home of the Little Sisters of the Poor at Hamrun, besides many private residences scattered all over the island. In 1887 he was appointed to the P.W. Department, and in his new capacity was entrusted with the execution of several important buildings.

Mr. Henry Reynolds Steer, R.I.

Mr. Henry Reynolds Steer, R.I., the well-known Midland painter in water-colours, died at Leicester on February 28, aged 69 years. Born in London and educated at The Priory, Highbury, he studied art at Heatherley's from 1879 to 1888. In 1896 he became a member of the Society of Miniature Painters, and in 1895 of the Leicester Society of Artists. His membership of the Royal Institute of Painters in Water-Colours dated from 1884.

Mr. Evan Tweedie.

The death has occurred of Mr. Evan Tweedie, a well-known Annandale architect and surveyor. During the war Mr. Tweedie was town manager at Gretna, and for a number of years he was engaged in land valuation under the Government. He was responsible for the plans of the extension of Lochmaben Sanatorium, and did much work under the Church of Scotland Property Act.

COMPETITION NEWS

Town Hall, Municipal Buildings, etc, Southampton.

The Corporation of Southampton invite architects of British birth and nationality to submit competitive designs for a proposed Town Hall and Municipal Buildings, Art Gallery, etc. Mr. H. Austen Hall, F.R.I.B.A., is the assessor. Premiums of £500, £300, and £150 are offered for the designs placed first, second, and third respectively. Conditions and particulars of the competition, together with a plan of the site, may be obtained on and after March 10 from the Town Clerk, Mr. R. R. Linthorne, Municipal Offices, Southampton, on deposit of £2 2s.

New Municipal Buildings, Peterborough.

We learn that sixty-one architects have submitted designs for the new municipal buildings at Peterborough. The designs have for some days been before the assessor, Sir Reginald Blomfield, R.A. The problem the architects have had to solve is a curious one, as the site is 540 ft. long and 40 ft. deep. The site is near the cathedral.

The Tite Prize and the Victory Scholarship, 1928: Preliminary Competitions.

Attention is called to the fact that the closing date for the receipt at the Royal Institute of British Architects, 9, Conduit-street, W.1, of forms of application for admission to the Preliminary Competitions for the Tite Prize and the Victory Scholarship (previously announced for March 5) has been extended to Monday, March 12, 1928.

R.I.B.A. Prizes and Studentships, 1928-1929.

We have received a copy of the R.I.B.A. Prizes and Studentships Pamphlet for 1928-1929. The pamphlet contains full information upon the various prizes and studentships, totalling in value nearly £2,000, together with, where applicable, the detailed programmes for the competitions. Copies of the pamphlet are obtainable at the R.I.B.A., price 1s., exclusive of postage.

COMPETITIONS OPEN.

Extensions to the Town Hall and Municipal Buildings, Accrington. Mr. Herbert J. Rowse, A.R.I.B.A., assessor	Particulars published in "Builder," Sept. 16	Sending in date. —
Senior School, Birkdale, Southport. Professor S. D. Adshead, Assessor. Premiums of £100, £75 and £50. Apply to Director of Education, Municipal Buildings, Southport. Deposit of 10s. 6d. required.	Aug. 12 & Nov. 18	1928 Mar. 19
Municipal College of Technology, Manchester, extension. Messrs. Alan E. Munby, H. M. Fletcher and Francis Jones, assessors. Premiums of £500, £400 and £300. Apply Mr. P. M. Heath, Town Clerk. Deposit £1 1s. required	Nov. 4	Mar. 3
School at Rickmansworth to accommodate 400 senior girls, for the governors of Royal Masonic Institution for Girls. Premiums: £750, £500, £400, £300 and £200. Mr. H. V. Ashley, F.R.I.B.A., Assessor. Apply, Mr. M. Beachcroft, 31, Great Queen-street, W.C.2. Deposit £2 2s.	1927. Dec. 9	1928 Sept. 5
Fifth Annual Competitions for Industrial Designs, organised by the Royal Society of Arts. Entry forms for competitions—which include a number concerned with architectural and designing subjects—must be applied for between May 1 and May 12, to the Secretary of the R.S.A., John Street, Adelphi, W.C.2	1928 Jan. 13	1928 June
Town Hall, Shops and Offices, Lewisham, for the Lewisham B.C. Premiums of £350, £250 and £150 are offered. Mr. Winton Newman, F.R.I.B.A., assessor. Conditions of competition may be applied for after March 1 to Mr. John Shuter, Town Clerk, Town Hall, Catford, S.E.6. Deposit £2 2s.....	1928 Feb. 3 & 17	—

THE ARCHITECTURE CLUB

The annual general meeting of this club was held on Thursday, March 1, at the Architectural Association premises in Bedford Square, W.C., the President, Mr. J. C. Squire, taking the chair. The meeting was preceded by the club supper, at which the following were among those present: Messrs. J. Armitage, W. Aumonier, C. Barman, O. Barron, A. C. Bossom, Darcy Braddell, H. B. Creswell, E. G. Culpin, M. J. Dawson, J. Murray Easton, A. Trystan Edwards, Stanley Hamp, C. Hussey, Basil Ionides, Gilbert H. Jenkins, H. V. Lanchester, Nathaniel Lloyd, Charles Marriott, Oswald P. Milne, Lionel G. Pearson, Professor A. E. Richardson, Howard Robertson, Miss Edith Shackleton, Harold Stabler, P. J. Westwood, W. L. Wood, R. A. Duncan, and the honorary secretary, J. H. Elder-Duncan.

The Chairman formally moved the adoption of the accounts as presented by the honorary treasurer, Mr. Darcy Braddell. Standing at May last there was a surplus of assets over liabilities of £60. The following officers were elected for the ensuing year:—President, Sir Lawrence Weaver; for the Executive Committee: Messrs. J. C. Squire, H. V. Lanchester, Stanley Hamp; hon treasurer, Mr. Darcy Braddell (re-elected).

Mr. Oswald P. Milne, in proposing a vote of thanks to the retiring President, Mr. J. C. Squire, for the work he had done, said it was not a mere vague matter of form, but an expression of gratitude and a realisation of the effort he had expended towards the success of the club. He had always been its mainspring, and his enthusiasm, knowledge of architecture, and the driving force he had brought to bear on club affairs, had been an inspiration to all.

Mr. Charles Marriott, in seconding the vote, said he preferred to dwell not on what Mr. Squire had done, but on what he was going to continue to do. All the benefits the club had received in the past the speaker hoped would be prolonged into the future.

Mr. Squire replied briefly. A vote of thanks to the other retiring members of the Committee was proposed by Mr. Stanley Hamp, and seconded by Mr. E. G. Culpin.

Mr. F. R. Yerbury then showed on the screen some very fine slides of present-day architecture in Great Britain, the rest of Europe, and America, accompanying each photograph with an amusing and most instructive running commentary. The President then called upon Mr. Howard Robertson to open a discussion on "Modernist Architecture."

Mr. Robertson said he felt he was a little prejudiced about modern architecture, for he felt, with the advance of the modern movement, architecture had got rid of a strait-waistcoat. The ordinary person who had been brought up properly, had general principles instilled into him, but yet there was no reason why he shouldn't be free to think for himself. Occasionally—as might be seen at the Stuttgart Exhibition—people went beyond extremes, but balance would eventually be adjusted. The best modern architects were not interested in stunts, but they were interested in trying to make a job practical, workmanlike, and suitable.

Mr. R. A. Duncan deplored the public's lack of intelligent interest in architectural and artistic matters. In his "house of the future," at Olympia, there was hung in a prominent position a picture that had been shown at the Flemish Art Exhibition. Few had noticed it, or remarked on it, which meant that 95 per cent. of the public did not know anything about architecture or art at all!

Miss Edith Shackleton said she was in agreement with the modernist spirit in architecture. Mr. Duncan's story of the Flemish picture illustrated the point that anything would go with it. It came as a shock to see from Mr. Yerbury's slides that Vienna—not a victorious country—could have built such beautiful houses. In England we had done some good work, but nothing like Vienna.

Mr. Charles Marriott said he looked upon modern architecture as freedom from aspidistras! Modern architecture did not aim at giving us new and useless features, but at freeing us from unnecessary things we did not want. The principal architectural aspidistras were the "orders." Modernism was an attempt to find order without the "orders."

Professor A. E. Richardson then spoke. He said that the term "modernism" was unfortunate. People were misled by "isms," and were apt to class the good with the bad. There were several issues of the question to be considered. The lay mind had become accustomed to historical styles, and, in consequence, the mass of architects catered for popular ideas; in addition, the psychologic bent in the English mind inclined to traditional values. The wretched compromise between the old and the new, which was in being at the present moment, might be attributed to exigencies of present-day conditions, and a thousand and one "extra-mural" causes. It was, therefore, clear that immediate changes in architectural expression could not be expected.

It had been established that fine building would make its own style; the beam, the support and the arch were constants, and homogeneity of construction recognised those fundamental attributes. In the sphere of planning, there were no limitations other than those of reasonable human requirements. Scale would always be determined by the human figure and the number of people to be accommodated. By the aid of steel and re-inforced concrete, architecture had become partly an engineering matter. The persistency of veneering methods tended to produce a structural-looking style. The various degrees of style-compromise were held in position by an internal skeleton, which was more or less revealed. That, said the speaker, was no fault of the architect. The universal use of a homogeneous material such as reinforced concrete would further rigidity of structure with a certain standardisation of expression. There would be scope for greater adventure; larger spans would be achieved. That pointed to slender supports and egg-shell walls, but the primary architectural features would still form part of structural systems.

The issue, therefore, narrowed down to the following:—Were we to give an up-to-date expression to the old constructional system or was it advisable to advocate nothing but concrete for construction? Present-day economy ruled out the latter suggestion, whatever the future might hold. Engineering opinion, on the other hand, inclined to the use of steel for rapid building—that was, as regarded commercial and street architecture. On the domestic side, the issue was less pressing. The great advances made in planning, the development of garden cities, and the beauty of English houses accorded with the English love of home life. Climatic conditions had to be considered. and local materials were not likely to be universally abandoned.

His last point, said the speaker, deserved attention. If an architectural structure arose from conditions of plan and was helped by a dominant structural idea, it would create its own surfaces. The French had given attention to that aspect of design and had had recourse to ornamented conventions derived from natural sources. It was clear that the whole question of architectural decoration, of colour, metal work, furnishing and internal treatment needed careful revision.

Mr. Oswald Barron said that few of the public expressed any wish for this style of house: they were largely in the architect's hands. He felt that all great architects should follow tradition. A lot of the trouble began at the Great Exhibition of 1851, when it occurred to various people to break tradi- it occurred to various people to break tradition.

Mr. Gilbert Jenkins, after welcoming the Club on behalf of the Architectural Association, said that in spite of what Professor Richardson had said, they wanted the word "modernism" to express the effort that was being made to cope with present-day needs. So much so-called modern stuff was irrational. In the houses shown at the Stuttgart Exhibition he felt it would be impossible to be comfortable.

Mr. Horace Taylor said he was depressed by the modern antiques that were springing up around us. He would like to see a society of modern architects who were banded together not to produce reproductions of modern architecture.

Mr. Alfred Bossom said that the whole architectural world suffered from plagiarism. Tradition, he felt, however, was the keynote; we had to look at the good work and progress and improve from that. He remarked how poor were the speculative houses that were being put up in the countryside. Many municipal authorities were ruining the landscapes.

Mr. Stanley Hamp said that from the remarks of some speakers it seemed as if we were being advised to copy some of the buildings shown on the screen. That was not so. We had our own traditions and could provide architecture that was suitable for our needs.

A vote of thanks to the Architectural Association and the speakers then closed the meeting.

MEETINGS

Friday, *March* 9.

Town Planning Institute. Lt.-Col. H. P. Cart de Lafontaine on "Paris Building Laws." 6 p.m.

Incorporated Institute of British Decorators. Mr. W. E. Greenwood on "Pompeian Decoration." 7.30 p.m.

Saturday, *March* 10.

Glasgow Architectural Craftsmen's Society. Visit to Bradley's Works. 3 p.m.

Monday, *March* 12.

Institute of Builders. Capt. W. T. Creswell on "Building Contracts and Sub-Contracts." At South Wales Institute of Engineers. Cardiff. 7 p.m.

Edinburgh Architectural Association. Annual General Meeting of Associate Section. 8 p.m.

Tuesday, *March* 13.

Illuminating Engineering Society. Mr. S. English on "The Manufacture and Properties of Glass and their Application to Illuminating Engineering." At the premises of Messrs. Holophane, Ltd.. Elverton-street, S.W.1. 6.30 p.m.

Wednesday, *March* 14.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "Spanish Mediæval Architecture." 6 p.m.

London Society. Visit to the Hovis Flour Mill, Westminster. 2.30 p.m.

Institution of Engineers-in-Charge. Mr. G. A. Hughes on "Wells and Well Boring." 7.30 p.m.

Leeds and West Yorkshire Architectural Society. Discussion on "That the Post-War rash of bungalows and houses now disfiguring the countryside is a reflection upon the Architectural Profession." 6.30 p.m.

Institution of Structural Engineers. Mr. H. Cane on "Epsom Grand Stand." At the College of Technology, Manchester.

Northern Architectural Association. Mr. H. Oswald on "Light and Air." 7.30 p.m.

Edinburgh Architectural Association. Rev. Father Paul on "Monastic Homes of Britain, Ancient and Modern." 8 p.m.

Thursday, *March* 15.

Architectural Association. Annual Conversazione. 8 p.m.

Institution of Structural Engineers. Mr. J. Singleton-Green on "Practical Applications of the Cement-Water Ratio Theory." At the Chamber of Commerce, Birmingham. 7 p.m.

Friday, *March* 16.

London Society. Rev. Father Wood on "Westminster Cathedral." 5 p.m.

ANCIENT BRIDGES.

At Monday evening's meeting of the R.I.B.A. (the President, Mr. Walter Tapper, A.R.A., in the chair), Mr. G. H. Jack, F.R.I.B.A., M.Inst.C.E, F.S.A., County Surveyor and Bridgemaster, Herefordshire County Council, reading a paper on this subject, said the literature on bridges was scanty. There was no work on English bridges such as that on the old bridges of France, which was published by the Press of the American Institute of Architects in 1925. During the last 20 years our transport developments had been so rapid, even sensational, as to create a revolution in road and bridge engineering, and, consequently, many historic and beautiful bridges had disappeared, either on account of structural weakness or insufficient width. The process of demolition and widening was still in full swing, and there was no sign of a halt. That we regretted the loss of fine examples of the work of the architects of the Middle Ages went without saying, and so did the fact that we could not run our twentieth-century civilisation with fifteenth-century equipment.

The rapid disappearance of old bridges in industrial areas was inevitable, but, in the rural parts of the country, and where traffic was not yet intense, the conditions were different, and it was here we might hope to preserve the graceful work of our forefathers for a long time to come. In our enthusiasm for this good work we must avoid an obsession for preserving the merely old. There was more bad work than good in every period. Neither must we be tempted to overestimate the appreciation of beauty in mediæval builders. The forms which we now so much admired were largely due to the limitations of the designers and especially their inability to deal with long spans. The sturdy piers, and short spans, with the narrow roadway all contributed to sightliness, but the forms were adopted, he fancied, not primarily out of regard for appearance, but mainly from utilitarian motives. It was not recorded that the mediæval builders were blamed as we were for putting utility first.

Many bridges of the Middle Ages showed a distinct ecclesiastical influence. The pointed arch so frequent during the thirteenth and fourteenth centuries not only gave the maximum waterway, but reduced the spandril space, thus economising material. In cases where the river banks were high, the adoption of the pointed arch was convenient, inasmuch as the apex could be carried up quite close to the road level, and at the same time the springing could be kept near the water level, as shown in the interesting fourteenth-century Balgownie Bridge over the Don at Aberdeen, and also in the fine bridge of the same date over the Wear in County Durham (Lambton Bridge). The frequent recurrence of modes, which started as early as the Roman occupation and continued right up to the present time, was confusing to say the least. Bridges, unlike buildings, served but one purpose, and consequently displayed the same general features. There was not much scope in variety when dealing with an arch or bridge pier, but, whenever the clever architect of the Middle Ages had a good chance, he made the most of it, and to this day we had not been able to surpass in grace the best work of the thirteenth, fourteenth and fifteenth centuries. Much dating information could be gleaned from the Bishops' Registers, Leland's sixteenth-century itineraries, the Quarter Sessions records, and the records of high floods.

The earliest bridge we had might be described as a series of tall stepping stones connected by stone slabs, such as Torr Steps over the Barle in a wooded valley of Exmoor, which might be as old as the Bronze Age. It consisted of twenty loose piles of large blocks of stone raised two or three feet above water level. These pillars were spanned by flat stones 8 feet long, 5 feet wide and 8 inches thick. The length of the bridge and approaches was 180 feet. Another example of the same type was the Post Bridge on Dartmoor. There was a wide gap between the date of these prehistoric examples and the earliest datable bridges. He knew of no bridge still standing in England of Roman date. There were some foundations of a four span bridge at Chesters on the Roman wall. The Romans would probably span most of our rivers by pile and plank bridges, all traces of which had long since disappeared. A good imitation of such a bridge had recently been constructed of concrete near the Roman Fort at Cardiff Castle by Mr. Grant. The lecturer had found ancient paved fords on the route of the Herefordshire Watling Street, but no remnant of a bridge. He came across the remains of a little bridge with arch stones very Roman-like near a Roman site in North Hereford, but there was no certain evidence of its date. It might be an early pack-horse bridge.

It was probable that the Cistercians introduced the round and ribbed arch into England in the twelfth century, which continued in vogue until the end of the sixteenth century. At the Cistercian Abbey of Fountains there were two small bridges quite near each other, the one built about the middle of the twelfth century, and the other early in the thirteenth century. In these little gems forming the approach to the Abbey buildings we could catch the spirit of the monkish architects and builders to whom we owed so much. He knew of no place where the beauty of twelfth- and thirteenth-century architecture, both in abbey and bridge, showed such perfect handling.

Twelfth-century bridges were scarce. One of the best was Elvet Bridge over the Wear in Durham city, built by Bishop Pudsey in 1160, and much widened in 1805. Another early example was King John's Bridge at Tewkesbury, built by the famous Peter of Colechurch, the architect of old London Bridge. The brick parapet was of seventeenth-century date, and the ugly watermain was inflicted in 1890. The thirteenth and fourteenth centuries were great bridge-building periods. Ludford Bridge over the Teme at Ludlow, built about 1220, with its ribbed arches and imposing piers and refuge bays, was one of the most interesting and picturesque bridges in the country. Dumfries Bridge over the Nith was of thirteenth-century date, and was built by the wife of John Balliol, the founder of the great College. Its arches were only 1¾ times the width of the piers; the piers were 16 feet wide and the arches 28 feet. For example of fourteenth-century bridges there was the lovely bridge over the Dee at Llangollen, Huntingdon Bridge over the Ouse, and a small single arch near Danby Castle in North Yorkshire. Clopton Bridge (1495) had recently had a narrow escape of being widened and ruined, and there were rumours of widening the Hereford Bridge.

The thirst for speed had much to answer for. So long as bridges at the approach to small country towns were wide enough to accommodate two lines of traffic, he failed to see any necessity for widening. A slight check on speed at such places was rather an advantage than otherwise. At any rate, the negligible loss of time did not warrant the spoiling of such monuments as the fine bridges to which he had just referred.

Wilton at Ross-on-Wye was certainly one of the finest bridges in the country. It had six round and ribbed arches; the stones of the outer ribs being curiously joggled. In 1912 the bridge was in danger of collapse, owing to the ribs under the parapets being forced outwards by the weight and vibration of modern mechanical traffic. The ribs were all secured by ferro-concrete ties connected to beams running the whole length of the bridge on either side. Just lately a new trouble had developed; the facework of the heavy piers was breaking away from the core, which was composed of rough lime concrete below flood level and earth above. Two piers had so far been dealt with, and great care taken not to mar the appearance of the bridge by patchy new stonework.

In the seventeenth century many bridges were damaged during the Civil War, and some entirely destroyed. The eighteenth century saw much bridge-building. The fine six-arch brick bridge over the Wye near the Brecon border was built in 1769. Its recent preservation proved a difficult task. All its arches were cracked longitudinally at about a foot from the arch face. The filling of the piers and spandrils was of loose earth, and the brickwork in the facework was in places no more than half a brick thick. The River Wye ran fast at this place and had scoured out the foundations. The structure was first underpinned, and then thoroughly strengthened and tied with ferro-concrete; all the old bricks were re-used in the reconstructed face, so as to preserve the original mellow appearance. The bridge was stronger now than when it was first built. A feature common in eighteenth-century bridges was the piercing of the spandrils by circular openings, a mode as old as the Romans. The famous Pontypridd Bridge over the Taff was built by a working mason, John Edwards, in 1750. Its span was 140 feet and its great rise 36 feet. Similar examples, though not so heroic, were Bodenham and Hampton Court over the River Lugg, near Leominster. For a twentieth-century example, with its three ferro-concrete ribs and open spandrils, he had chosen a bridge built under his own supervision in 1925 over the River Teme. It replaced a five-arch brick bridge erected in 1761.

They were perhaps more fortunate in Herefordshire than most places. Their county was one of those tracks of country which, according to Professor Adshead, should be preserved for its sheer beauty. The fact of its geographical position being just off the main streams of industry accounted for there being no arterial roads, with their straight lines of white kerbs, flashing danger signs, and concrete bridges, and so they could still enjoy their rural simplicity and their unspoilt ancient bridges, for, out of the large number of 150, only two as yet had had to give place to more strength and width. The spoiler, however, was not unknown in the Wye Valley.

In executing bridge repair work, he soon discovered a difficulty in accomplishing his task satisfactorily by adopting the usual contract methods, for the reason that it was not possible to specify the requirements until the defective parts had been taken down. The Council was advised to engage and train men for this special work, and the results surpassed their best expectations. Not only was the work tastefully done, but it was no dearer than contract work, often much cheaper and in every way better; and, further, he had found that the men took the keenest interest in their work and were anxious to acquire knowledge of the construction and history of bridges.

He trusted that the Society for the Preservation of Rural England would soon be able to enlist the good will of the county

and district councils, especially where bridges were concerned, The only authority possessing statutory powers was the Ancient Monuments Department of the Office of Works, which had already scheduled 112 bridges in England, 14 in Scotland, and 24 in Wales. It would be a good thing if all ancient bridges of character could be scheduled, if only to prevent untimely demolition. It was certain that the ever-increasing needs of road traffic would necessitate, and that very shortly, the disappearance of many more of the older bridges, and that brought him to his last word—a plea for a record of our English bridges on the lines of the French work to which he had already referred.

Mr. H. M. Fletcher, moving a vote of thanks to the lecturer, said Mr. Jack was the type of county surveyor that we wanted. If we could only get officials to take the sensible, sane view of their duties that Mr. Jack had taken, the country would be much better off. He (the speaker) warmly supported the appeal for the making of a record of our bridges; and he believed that the Society for the Protection of Ancient Buildings was already making a collection of photographs. We should, he continued, go on agitating for the preservation of Waterloo Bridge. If it disappeared, what hope was there of other equally fine things being preserved? Had we anyone designing bridges to-day who could be trusted to provide a masterpiece in its own kind to take the place of Waterloo Bridge? Waterloo was the culminating point of a great tradition of masonry bridge building, and as such should be preserved.

Sir Henry Maybury, seconding the motion, said a good deal was being done to preserve our old bridges all over the country. More and more of them were being scheduled. At the same time new bridges were being built. There was the new bridge at Berwick, for instance, shortly to be opened by the Prince of Wales; he hoped that architects would visit it, and he believed they would not consider it "too bad."

Mr. C. R. Peers said in his view the era of those beautiful old bridges was over; the heavy traffic of to-day was often too much for them. The arch was becoming constructionally obsolete, and in course of time it might be forbidden to put a pier in a stream that could be spanned by a single beam. The old bridges were a great asset to a city, and the more we spent on preserving them now, the better we should be pleased later on.

Mr. A. R. Powys said the S.P.A.B. had photographs of nearly all the bridges south of the Trent, and of some to the north, but he was not sure whether they would be able to publish a book on the subject. With regard to ferro-concrete, he had a great admiration for it, but it was a little running away with us. Granite would surpass ferro-concrete in strength if used properly.

Professor S. D. Adshead said why should we wish to span all rivers in one span? Was there such an enormous increase in river traffic to justify single-span bridges over the Thames?

Mr. H. V. Lanchester said the old bridges were a common-sense solution of the problem. If we started to build big bridges we should "unscale" the city and make ourselves pygmies.

Mr. Wilson pointed out that weakness in the spandrils of an old bridge was no reason for its demolition. The arch was the strong part of the bridge. There was an enormous margin of strength in the arches.

Mr. Gilbert H. Jenkins having suggested that Mr. Jack's methods of conservation should be brought to the notice of county surveyors all over the country, Sir Henry Maybury said that this had already been done by the Ministry of Transport.

Several other speakers having joined in the discussion, the President put the vote of thanks to the meeting, which was heartily accorded, and Mr. Jack replied.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

The Cubing of Buildings.

SIR,—The extract from the current issue of the R.I.B.A. Journal in your issue of March 2 reads that "the Practice Standing Committee regret that more support is not being accorded to their standard system of computing cubic contents of buildings." It is always difficult to obtain co-operation in relation to such matters, but in this case the reason does not seem far to seek.

The method of cubing may be sufficient for arriving at costs of buildings for insurances, etc. It may also be a guide to individuals who have compiled their own data and have drawings, specifications, and quantities to fall back upon for further information if it is desired. But when such data—even on the form now advocated by the committee—is published for the use of people who cannot refer to these particulars, it is liable to be an entirely unsuitable and misleading method to adopt for arriving at the approximate cost of new buildings. It is an empirical method based upon a cubic measurement of air space which bears no relationship to the cubic, square, or lineal measurements, upon which the costs of the whole of the building materials and labour are based in tendering for work. Empirical methods are fast giving way in all directions to scientific investigation, and if a reliable method of approximate estimating is to be established it must be upon the basis of systematic measurement. The basis of systematic measurement very generally recognised at the present time in the building industry (and to be officially recognised under the new Form of Contract) is the Standard Method of Measurement of Building Works, authorised by the Surveyors' Institution and National Federation of Building Trades Employers, and the medium is the bill of quantities.

Reliable data upon approximate estimating based upon the bill of quantities would be of great value to all branches of the building industry, and it is quite possible, with the joint co-operation of architects, quantity surveyors, and contractors, to devise a method—although it would be a long and arduous task—by which such data could be collected and collated on scientific lines. Approximate estimating built up upon such data would advance the prestige of the building industry instead of, as is often the case at the present time, forming a basis for a series of misunderstandings and waste of time and expense to the clients, architects, and builders concerned.

A. W. D.

Stone Preservation and Decay.

Sir,—Referring to a paragraph on page 329 of your issue for February 24, I note that Professor Laurie's remarks that the amount of free lime in mortar should be reduced by means of pozzuolana or other materials as trass, burnt clay, crushed bricks, and burnt shale; there is such a remarkable difference in the nature of trass as compared with the other inert materials classed with it that from my long experience in cement and concrete work and the use of different admixtures, I trust you will find space to publish this reply in your next issue.

Trass is a volcanic material which is found in large deposits in the Andernach-on-Rhine district in Germany. It is of a whitish-yellow colour and is extensively used on the Continent for the improvement of cement mortar. It is no new thing, as the Romans almost 2,000 years ago were impressed with the strength of lime mortar, which had trass incorporated with it. Some years ago alterations had to be carried out on a bridge at Cologne which had been erected some fifty years previously, and it was found that the stonework broke before the mortar. On examination of the records it was found that the mortar which had been used for the under-water work was composed of one part of trass, one part of lime, and one part of sand, whereas for the jointing material above water level two parts of lime, one part of trass and four to five parts of sand were used. This is definite proof of its utility when used in combination with lime.

Applied in conjunction with Portland cement, it has proved equally effective, and as no other material possibly could do, because of its chemical composition and physical condition. It contains 55 per cent. to 60 per cent. of silica, 10 per cent. to 15 per cent. of alumina, with a small percentage of lime and other ingredients, but the active element in it is the soluble silicic acid, and the measure of its value is the amount of water it holds in combination. It is stated by Professor Laurie that he can see no difference between it and Scottish spent shales. Having had experience of both I can say that it is totally different.

The shale approximates in analysis 30 per cent. to 35 per cent. of silica, 5 per cent. to 10 per cent. of alumina, and 25 per cent. to 35 per cent. of lime, and as these shales have been passed through the retorts for the recovery of the oil content, they have no more cementitious value in concrete than crushed bricks, as the silica has been completely dehydrated and rendered insoluble by the treatment, and as such does not readily enter into combination with the lime. Further, the lime content is a serious drawback, as it is the free lime which is set free on the hydration of Portland cement, which has to be tied down, and consequently it is unscientific and unwise to add more and increase the trouble.

To obtain the special quick hardening and high strength Portland cements now on the market, it is necessary to lime high, burn at an increased temperature and grind more finely, and yet to fulfil what the architect and the builder require, namely, a cement which gives constancy of volume, regular setting properties, and reliable and increasing strength without set-backs, but manufacturing conditions are such that if the user demands a rapid hardening cement he must realise that he cannot have it without having to pay the penalty of an increased amount of lime being set free on hydration.

Professor Kuhl, the well-known authority on cement in Germany, has stated that with the present high-limed and finely-ground cements it must be accepted that large quantities of lime-hydrate are formed on hydration by partial hydrolysis of the higher calcium silicates, and he considers that unsoundness often occurs due to the "crystallisation pressure" of this lime-hydrate.

Where concrete is intermittently wet and dry, as, for instance, when it is exposed to the ebb and flow of the tide, it has been shown that there is a decrease in the strength of the concrete owing to the washing out of this lime-hydrate, but where the concrete is totally submerged this loss is slight as capillary forces prevent the percolation of the water. It is essential, therefore, to add something to the Portland cement which can on hydration immediately combine with the free lime and form an insoluble compound; this is achieved by the use of trass for immediate beneficial results, whereas with burnt shale the combination would take generations to effect. Adding more cement to the mix does not help matters, as it only aggravates the fault, and although we have been slow in this country in realising the advantages of an admixture of trass, on the Continent this question has been thoroughly examined and a full series of tests have been carried out.

Burchartz in 1923 showed that in small proportions trass increases the crushing strength of concrete, it improves both fat and lean mixtures, but especially the lean mortars. It increases the density of the concrete in which it is used, the increase being dependent on the type of cement used, but the chief action of trass results from its

chemical combination with the free lime in the concrete.

No reduction in the proportion of cement used should be made, and where a mixture would be ordinarily one part of cement to two parts of sand and four parts of aggregate by volume, the addition of a half-part by volume of trass gives an increase in compressive strength of over 30 per cent., in addition to greater density and increased waterproofing qualities, together with the formation of this insoluble compound with the free lime present, so that the surface of the concrete is not weakened and spoilt by the formation of crazing or the leaching out of the lime-hydrate, and the concrete is more resistant to the action of the liquors present in breweries, sugar refineries, creameries, etc.

James Watson, D.Sc., F.I.C.

Sculptured Foliage in Architecture.

Sir,—Mr. Charles Mattingly's letter on the above subject raises a point which must deeply interest all students of architecture. It is certainly obvious to any student of history or the evolution of mankind that mere education or intelligence must play a comparatively small part in certain departments of art. It is commonly understood that the vocabulary of the mediæval craftsman was restricted to 300 or 400 words, and it may be that the difficulty of expressing himself in words intensified his powers of expressing himself through his art.

Mr. R. N. Bradley, in his book on "Duality," throws out some interesting suggestions which seem to cast some light on this problem. He says:—"*We have yet to realise that what can be done with intelligence can very often be done better without it.*" Again, "*There is a knowledge transcending personal experience.*" Again, "*Is it possible that we really know everything, merely failing in realisation?*'

These suggestions seem to indicate that to-day we are so hampered with rules and formulas and trammelled by continuous conscious efforts that the unconscious mind gets little or no chance to come into free and active play. Certainly when we look on such work as the spandrils of the north porch at Wells Cathedral, the nave caps of West Walton Church, or the caps of the Angel Choir at Lincoln, we must admit that such work shows an evidence of intense spiritual rapture which is absent from most of the work of to-day. Industrialism and Dean of Guild Courts are not conducive to the free play of the subconscious mind, but the human race may be moving through the discipline of conscious effort to a higher plane.

William Davidson.

The late Halsey Ricardo.

Sir,—As one who appreciates the works of the late Halsey Ricardo, I find your remarks in the article in your issue of February 24 of great interest. His methods of construction recall many of the details of the Howrah Station at Calcutta, and he used (I think for the first time on modern buildings in Calcutta) 2 in. bricks, having white joints, with great effect.

His ingenious method of building up an artistic and ornamental column some 25 to 30 feet high from bull-headed railway lines in the Restaurant Room at Howrah has often been commented on. The columns are octagonal in plan and have distance panels or "grilles" placed at intervals up the entire shaft, and an artistically designed cast-iron cap surmounts the top. I designed the large extension of the station, and it was no easy matter to design a building to harmonise with Ricardo's designs for an entirely different purpose. The Howrah Station has always been greatly admired, and it is a remarkable thing that Ricardo should have been responsible for only one building in India after his initial success. I think he did "advise" the late Edward Thornton, F.R.I.B.A., on a scheme of colour architecture which stands with much effect near Dalhousie Square, Calcutta, but this is the only building of its kind and was never repeated.

Stephen Wilkinson.

[*Correspondence continued on page* 423.]

ILLUSTRATIONS

Proposed House at Sherborne, Dorset.

The drawing reproduced represents the preliminary sketch plans made a few years ago for a house on a hill-top site near Sherborne. It was to be built in the local stone backed with brick, and with a roof of Cotswold stone tiling. The scheme was never realised, for the owner bought an old farmhouse which was demolished, and the re-use of the old material necessitated an entirely redesigned scheme of more traditional character which was eventually built.

The house was designed by Mr. Baillie Scott, F.R.I.B.A., the drawing illustrated being by Mr. A. E. Beresford.

Lloyds Bank, Ltd., Cornhill and Lombard-street, E.C.

For these important new city premises, Sir John Burnet and Partners and Messrs. Campbell Jones, Sons & Smithers are the associated architects. The consulting engineer is Dr. Oscar Faber, D.Sc.; the quantity surveyors, Messrs. Harris & Porter; and the clerk of works, Mr. F. J. Camp.

The general contractors are Messrs. Trollope & Colls, Ltd., and among the subcontractors are the following:—Messrs. B. Goodman, Ltd., demolition; Redpath Brown & Co., Ltd., constructional steelwork; Faldo & Co., Ltd., asphalting; Isler & Co., Ltd., artesian wells; Waygood-Otis, Ltd., elevators; Fenning & Co., Ltd., granite and marble; Birmingham Guild and H. H. Martyn & Co., bronze work; Chatwood Safe Co. and Milner Safe Co., Ltd., strong-room doors and grilles.

Further particulars of the work, together with an inset illustration, were given in our issue for January 13, 1928.

House at Ardingly, Sussex.

This house, which is at present under construction, is situated on high ground overlooking the Sussex Weald and South Downs. It is being constructed of stock bricks made in the village, with "Coverwell" tiles of Sussex manufacture on the upper walls and roof.

The architects are Messrs. Searle and Searle, of Paternoster House, E.C.4, and the builder is Mr. E. H. Munnion.

Two Large Bridges.

On page 411 are given recent views of the two largest bridges now nearing completion in this country, namely, King George V Bridge, at Glasgow, and the new bridge across the Tweed, at Berwick. Both bridges are in reinforced concrete. The Glasgow bridge is 80 ft. wide between parapets, and has a length of 412 ft. The bridge is of particular interest owing to the introduction of a series of cast steel roller bearings at each abutment and pier; at these points the bridge superstructure, or deck, is completely severed from its supporting members, and transverse expansion joints are provided to allow for expansion and contraction. The general design for the bridge was prepared by Mr. Thomas Somers, M.I.Inst.C.E., the City Engineer; the reinforced concrete design is by Messrs. Considere Constructions, Ltd. The contractors are Messrs. Melville Dundas and Whitson, of Glasgow. The total length of the Berwick bridge is 1,398 ft., including a viaduct 192 ft. long forming the southern approach. The width of the roadway and footpaths is 46 ft. The consulting engineers for the work are Mr. J. A. Bean, F.G.S., County Surveyor, of Northumberland, and Colonel Bressey, Chief Engineer to the Ministry of Transport. Messrs. Mouchel and Partners, Ltd., are the executive engineers, and the contractors Messrs. Holloway Bros. (London), Ltd.

Prentice Wood, Farnham Common, Bucks.

This is a week-end and summer residence, built for Dr. Ivo Geikie Cobb, M.D. The original eastern half, when erected in 1922-23, was planned to be added to at some future time. The house was completed during the first half of last year. Multi-coloured, hand-made sand-faced tiles were used for the roof and vertical faces of the upper part.

Messrs. Wakelin & Rampling, of Great Cornard, Sudbury, Suffolk, were the builders. The iron casements and leaded lights were made by Messrs. C. E. Welstead, Ltd., of Croydon; the central heating and domestic hot-water supply were installed by Mr. J. T. Morton, of Kingston; the wrought-iron balcony railing and weather vane (not shown in the perspectives) were executed by Messrs. F. Clubb & Son, of Sudbury, Suffolk. Mr. William J. Bird, of Thornbury-road, Brixton Hill, S.W.2, was the electrical engineer for the 1927 extension; and Messrs. Stirling & Johnson were the roofing contractors last year. Messrs. Roberts Adlard & Co. did the tiling in 1923.

Mr. Basil Oliver, F.R.I.B.A., was the architect.

New Central School, Chiswick.

This school has been erected on a site of 6½ acres. It consists of a main front building of two stories, containing large classrooms for woodwork, engineering, chemistry, physics and art, with four smaller classrooms and rooms for the headmaster and assistant male and female teachers and headmistress, two of the classrooms being specially fitted with "Vita" glass in order to test the benefit of the ultra-violet rays upon the children, and both the head teachers and the medical officer will watch the experiment and probably ultimately convey the results to the public. Other accommodation may be studied from the plans.

The contractors were Messrs. George Bollom & Sons, of Acton, the final account being £31,434, but playground, furniture and equipment have brought the total cost to £35,382. The principal sub-contractors were:—Messrs. R. H. & J. Pearson, heating; the West Bromwich Casement and Engineering Company, steel windows; Messrs Sidney Hellyar & Co., electric lighting; the Standard Wallpaper Co., sanitary fittings.

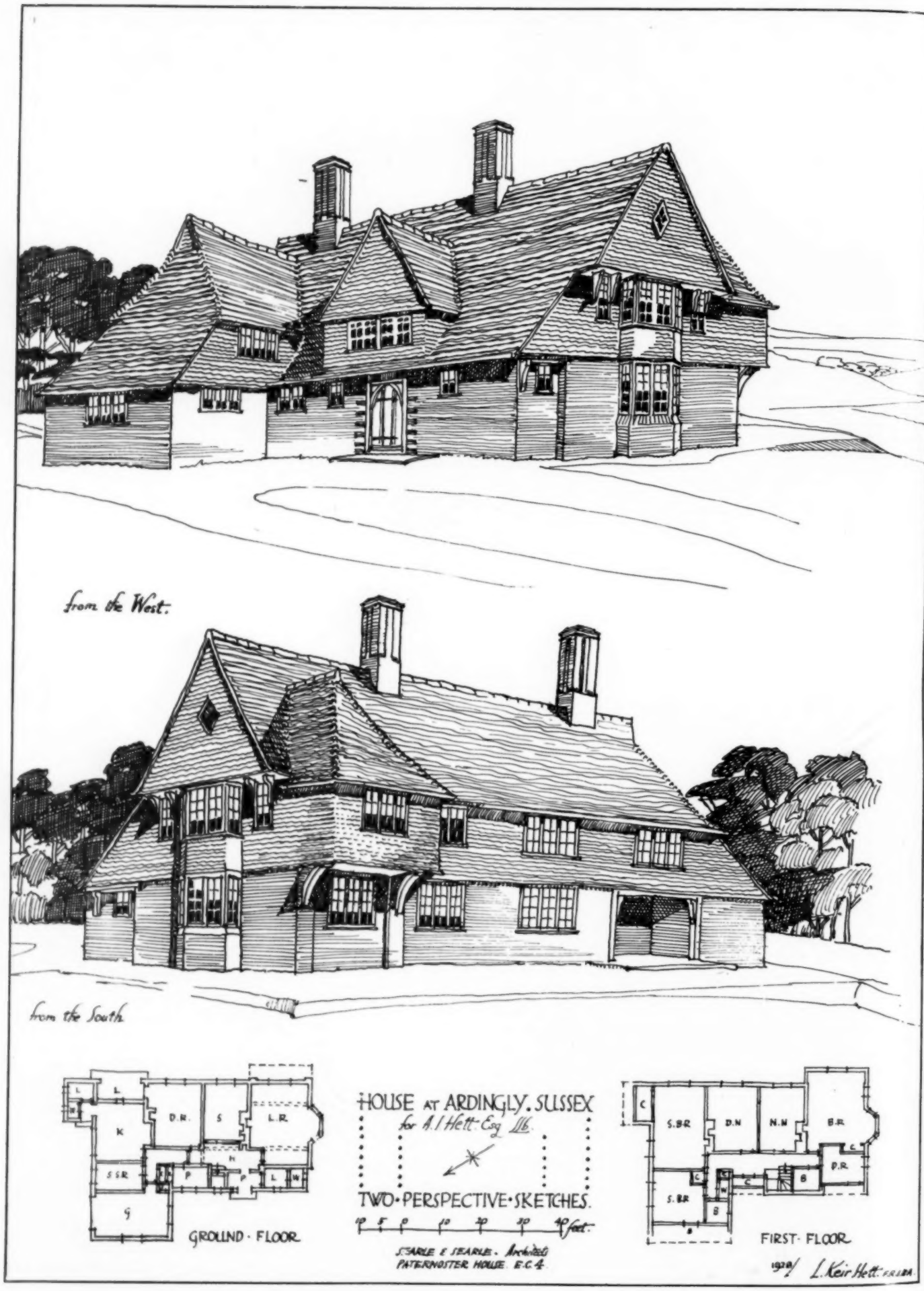
The architect for the school was Mr. Edward Willis, F.S.I., etc., architect, surveyor and engineer to the Brentford and Chiswick Council, and the assistant principally engaged on the drawings and supervision was Mr. L. A. Cooper, L.R.I.B.A. The clerks of works were the late Mr. W. Bourne and Mr. Hugh Evans.

New Infants' School, Beverley-road, Chiswick.

The site on which this school has been erected was originally intended to be used for a church, together with a parish hall and vicarage. The hall was the only part of the scheme that was completed, and the Chiswick District Council eventually purchased the hall and site for educaton purposes. The school accommodates 400 infants. The classrooms have been laid out as wings to the existing hall, facing south and looking on to Homefields, a public open space of ten acres. A special feature of the design is the arrangement of glazed folding screens to all classrooms, enabling nearly the full length of the south side to be completely open in suitable weather. The main roof is projected over these movable screens on cantilevers, giving an open verandah and access corridor 8 ft. wide entirely free from obstructions in the form of piers or columns. The main lighting of the classrooms is from the north or Beverley-road frontage, the windows being of steel construction of ample superficial area and 100 per cent. opening.

The cost of the school, including playgrounds and repairs to the existing hall, was approximately £12,000. The builders were Messrs. A. Roberts & Co., Ltd., of Kensington, W.8; Messrs. Young & Brown were the quantity surveyors; the assistant in charge, Mr. L. A. Cooper, L.R.I.B.A., etc.; clerk of works, Mr. H. Preece James; and the architect, Mr. Edward Willis, F.S.I., etc., Town Hall, Chiswick.

UNIV. OF MICH.


from the West.
from the South.
HOUSE AT ARDINGLY. SUSSEX
for A. I Hett Esq. M.C.
TWO · PERSPECTIVE · SKETCHES.
10 5 0 10 20 30 40 feet.
SEARLE & SEARLE. Architects
PATERNOSTER HOUSE. E.C.4
GROUND · FLOOR
FIRST · FLOOR
1928 L. Keir Hett F.R.I.B.A.

A House at Ardingly, Sussex.

MESSRS. SEARLE & SEARLE, Architects.

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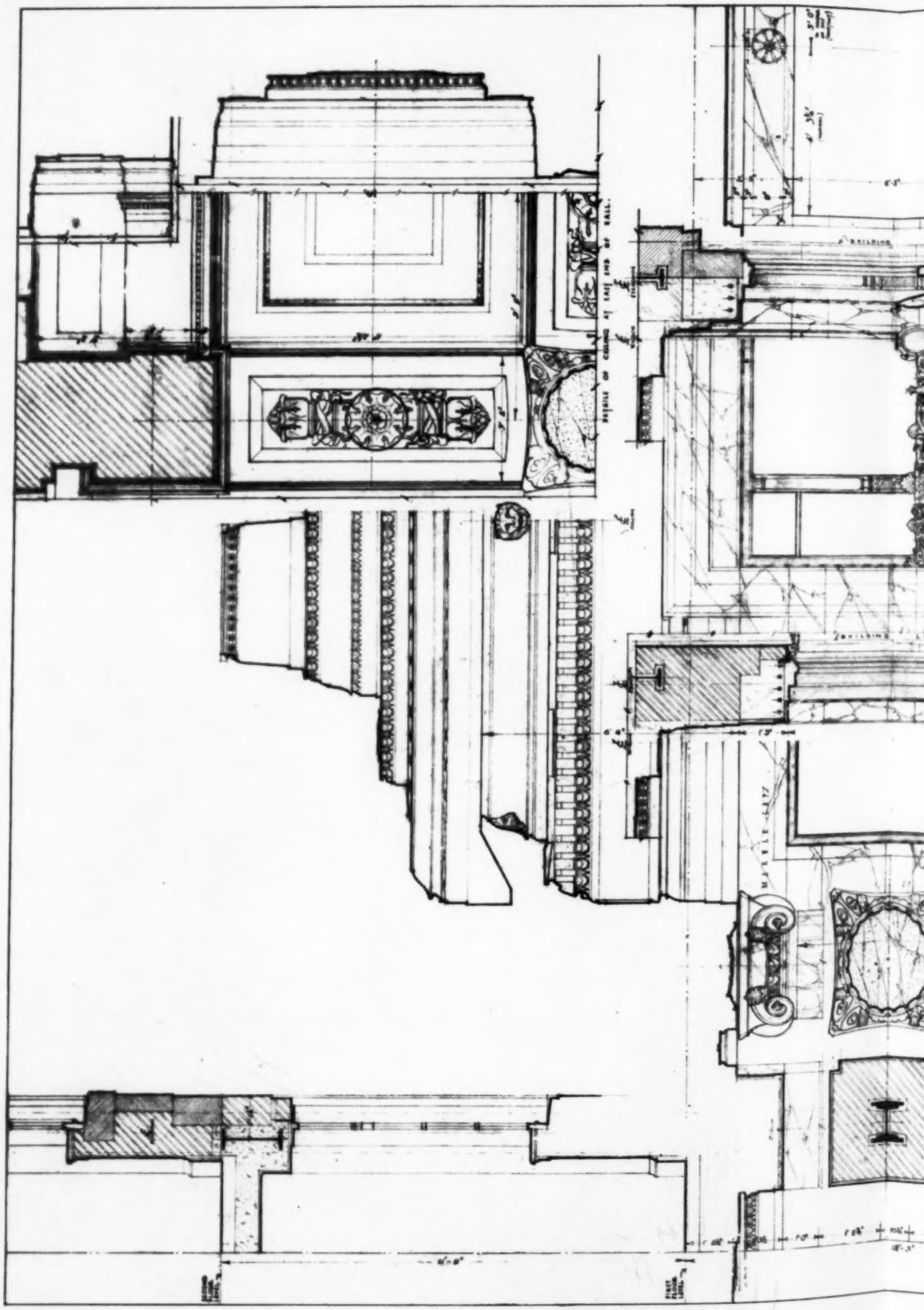
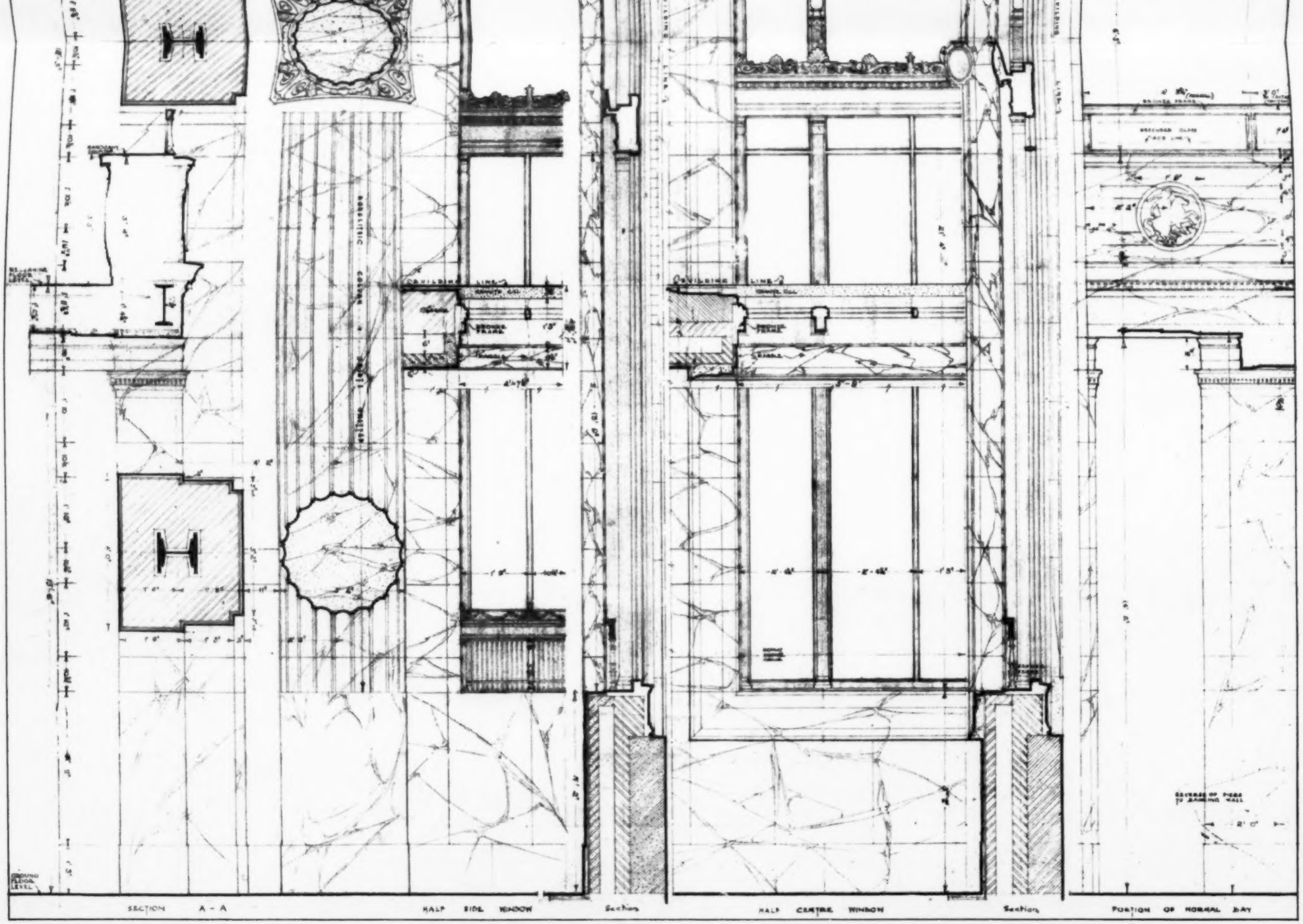
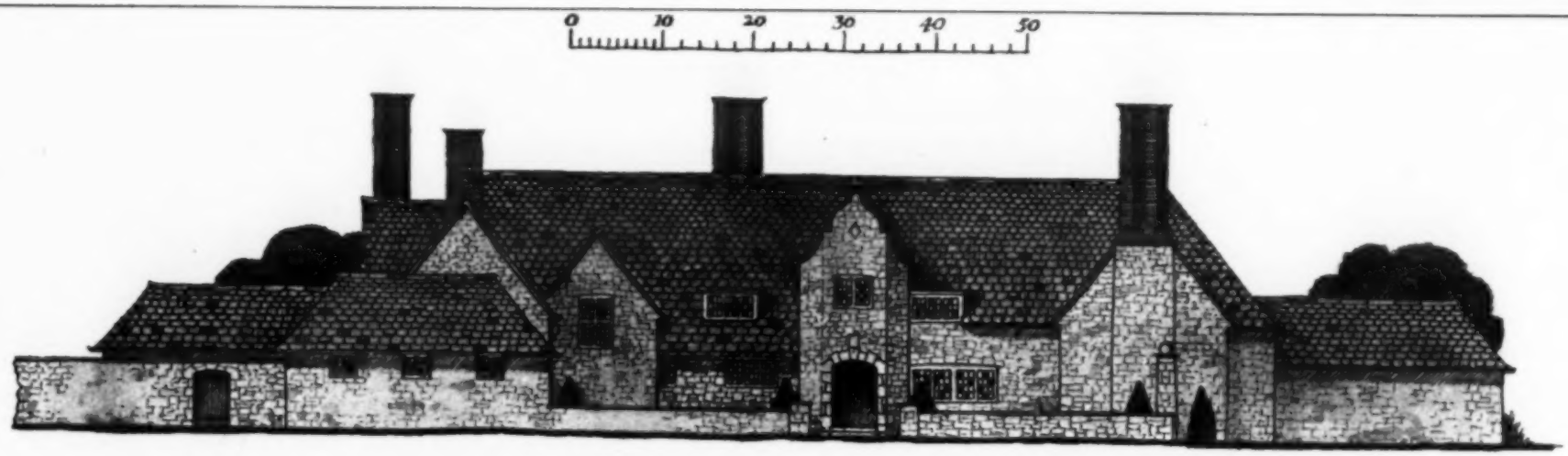




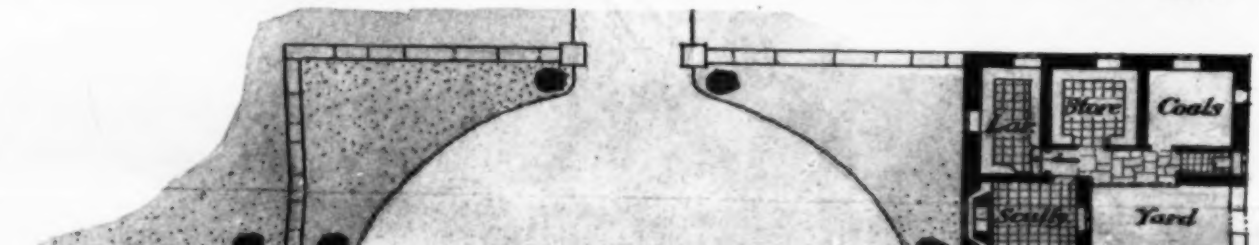
NEW HEADQUARTERS FOR LLOYDS BANK LIMITED, CORNHILL AND LOMBARD STREET: DETAILS OF MAIN BANKING HALL.

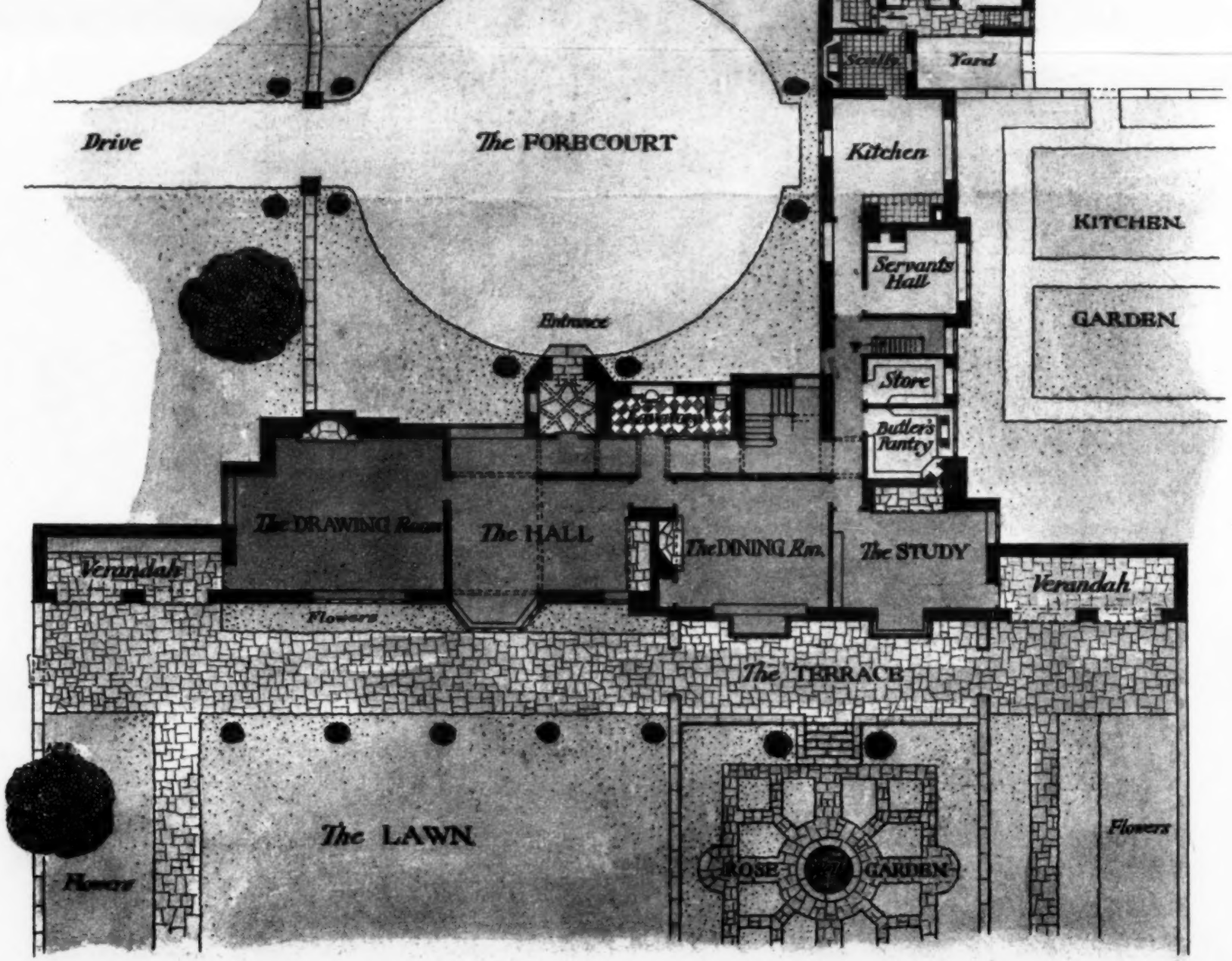
Sir John Burnet & Partners, and Messrs. Campbell Jones, Sons & Smithers, Associated Architects.



Elevation from NORTH - Entrance Front

Elevation from SOUTH - Garden Front





PLAN *of the* GROUND FLOOR

HOUSE, SHERBORNE, DORSET.

Messrs. Baillie Scott & Beresford, Architects.

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Palmer-Jones Delt. — Prentice Wood. View from North West. — Basil Oliver F.R.I.B.A. Architect.

Palmer-Jones Delt. — Prentice Wood, Dr. Ivo Geikie Cobb's Week-end Cottage at Farnham Common, Bucks. View from South-West. — Basil Oliver F.R.I.B.A. Architect.

A Cottage at Farnham Common, Bucks.

MR. BASIL OLIVER, F.R.I.B.A., Architect.

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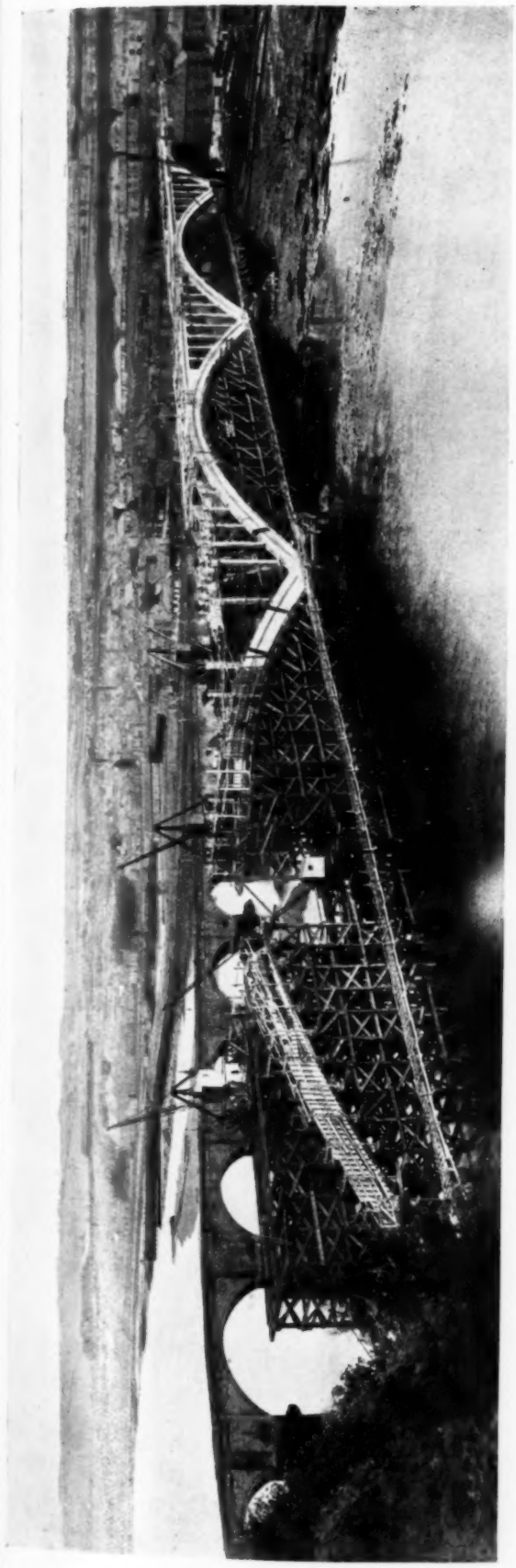
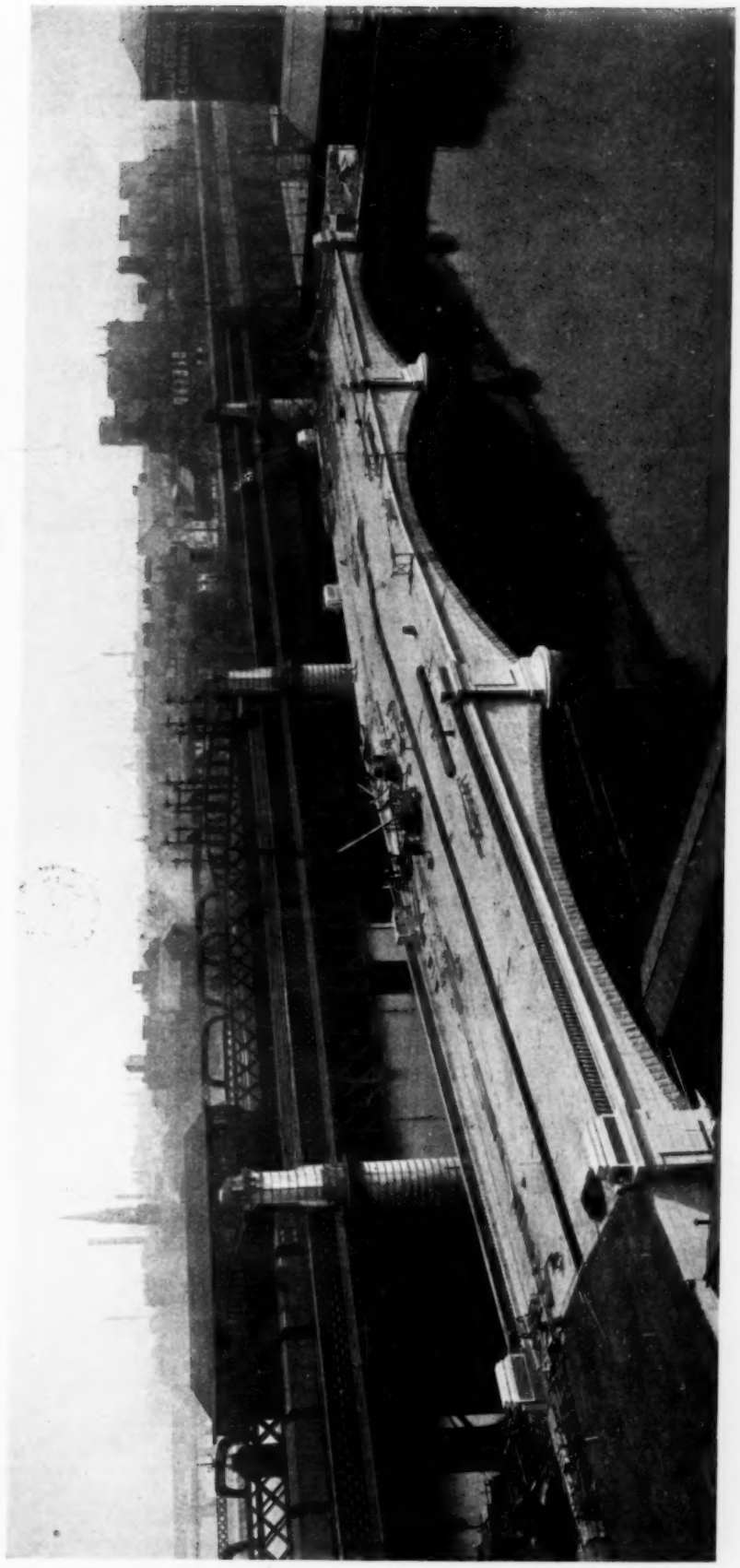
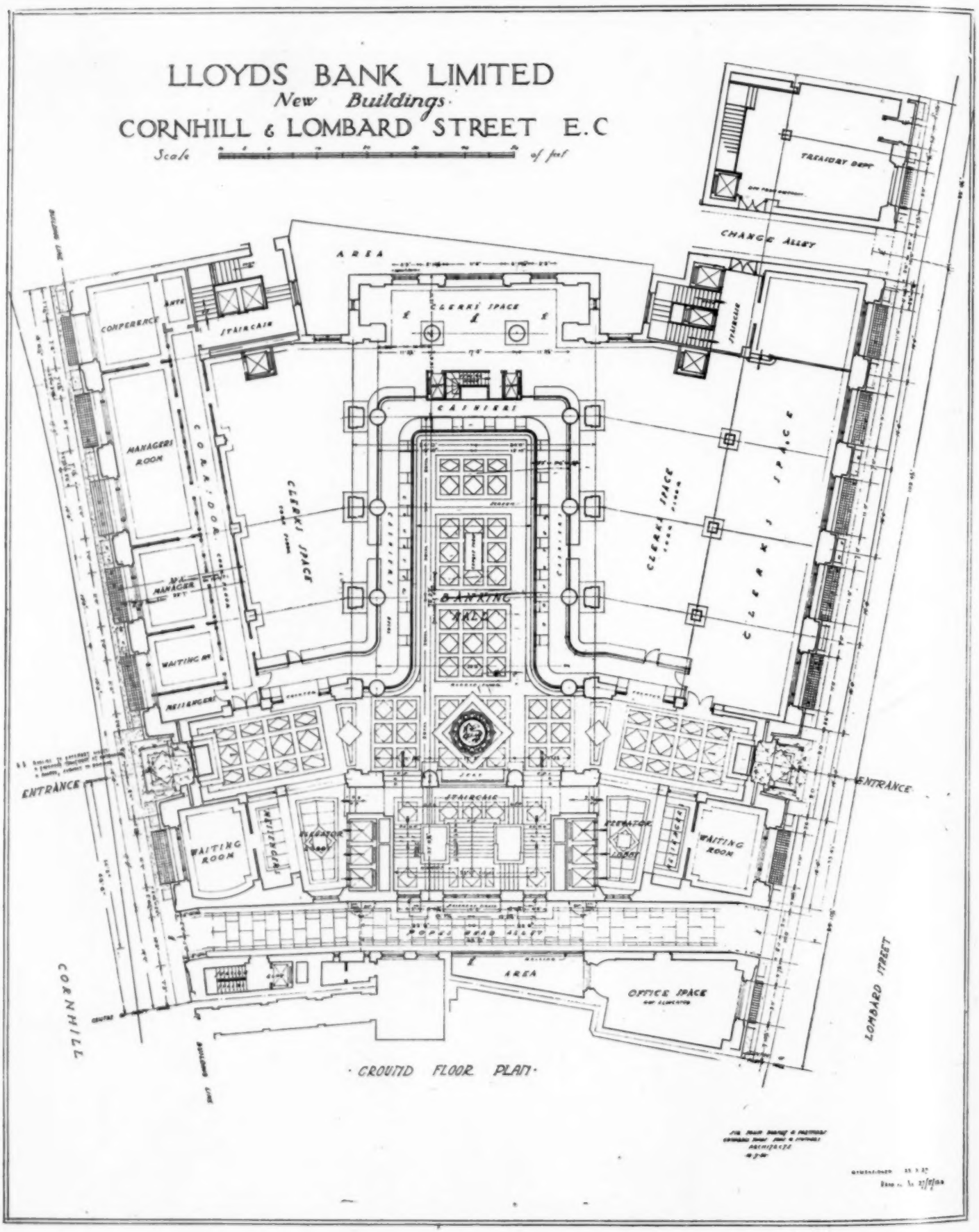


Berwick Bridge: General View from North Side of River looking down stream.

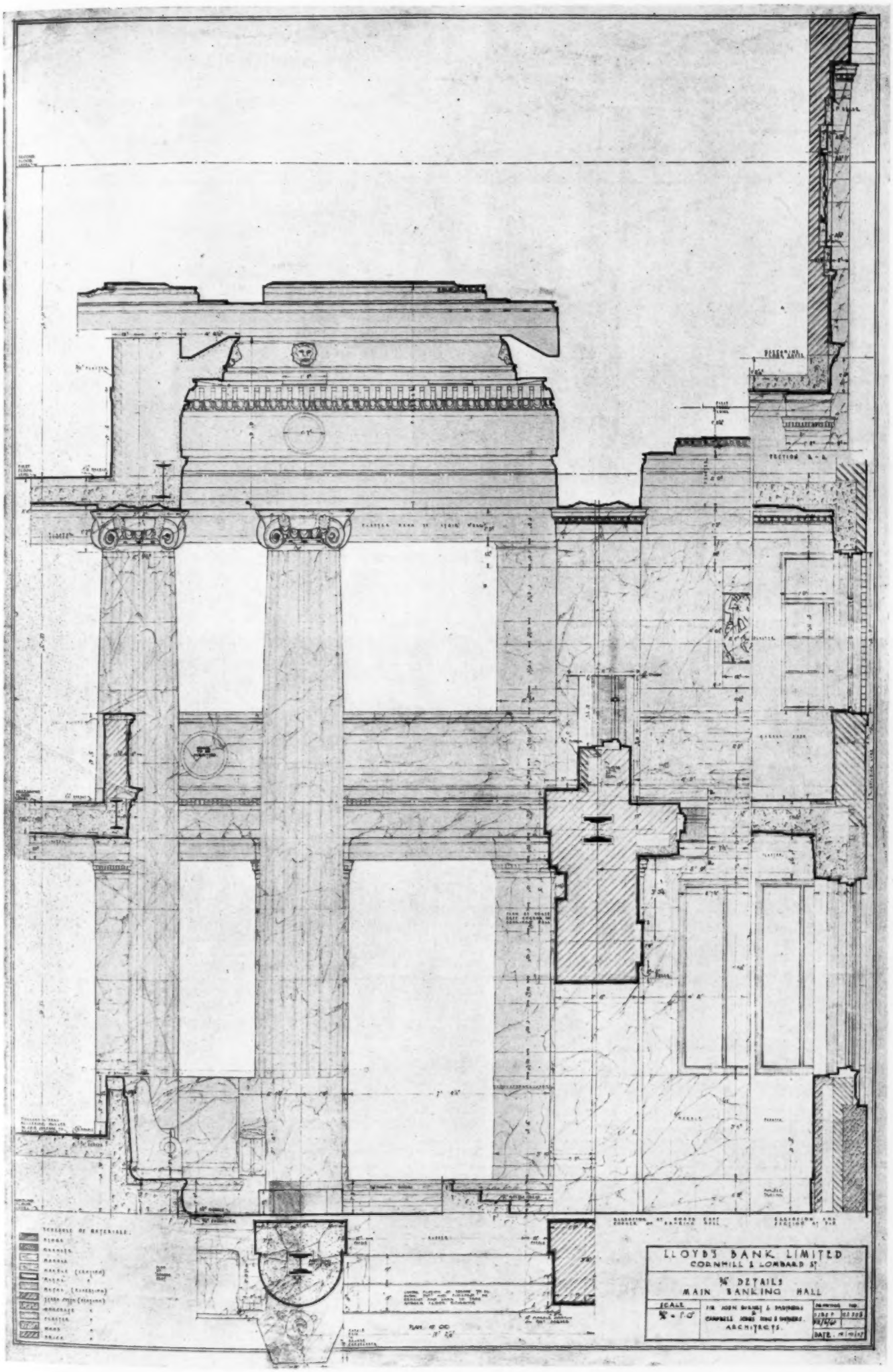


King George V. Bridge, Glasgow.



New Headquarters for Lloyds Bank Limited, Cornhill and Lombard Street, E.C.

Sir John Burnet & Partners and Messrs. Campbell Jones, Sons & Smithers, Associated Architects.



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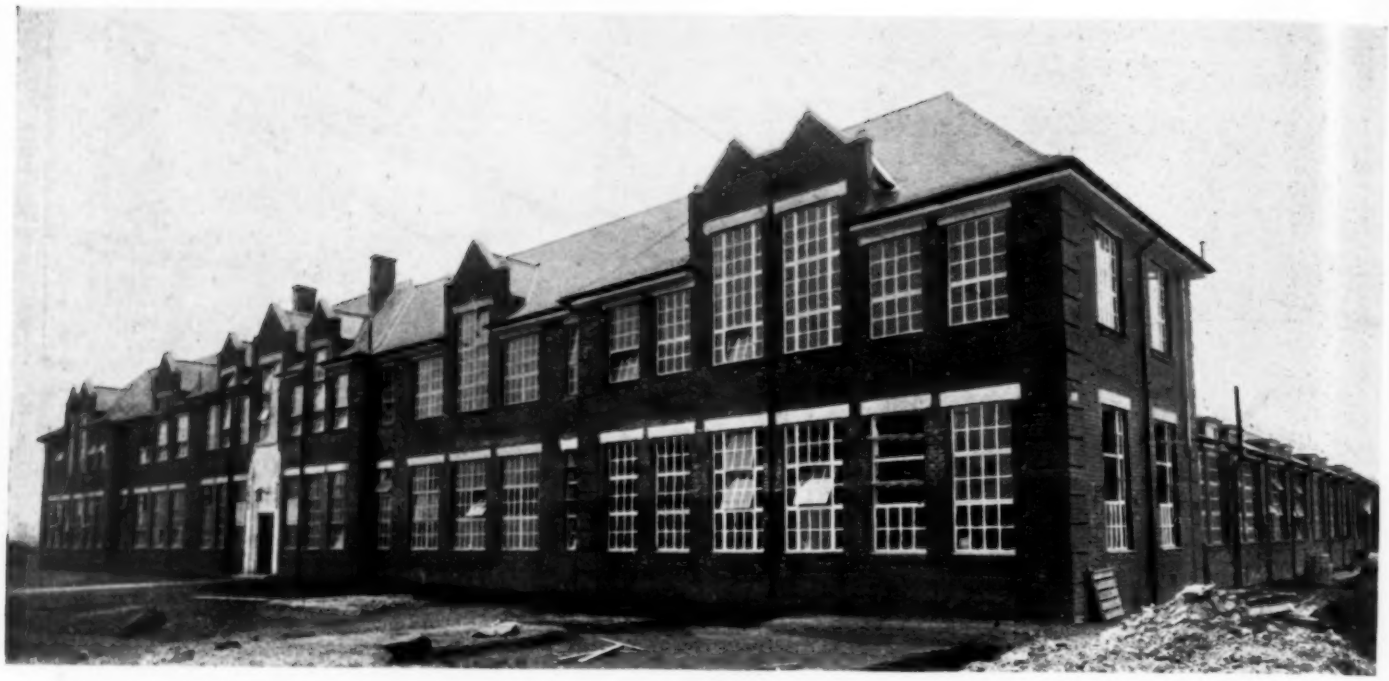
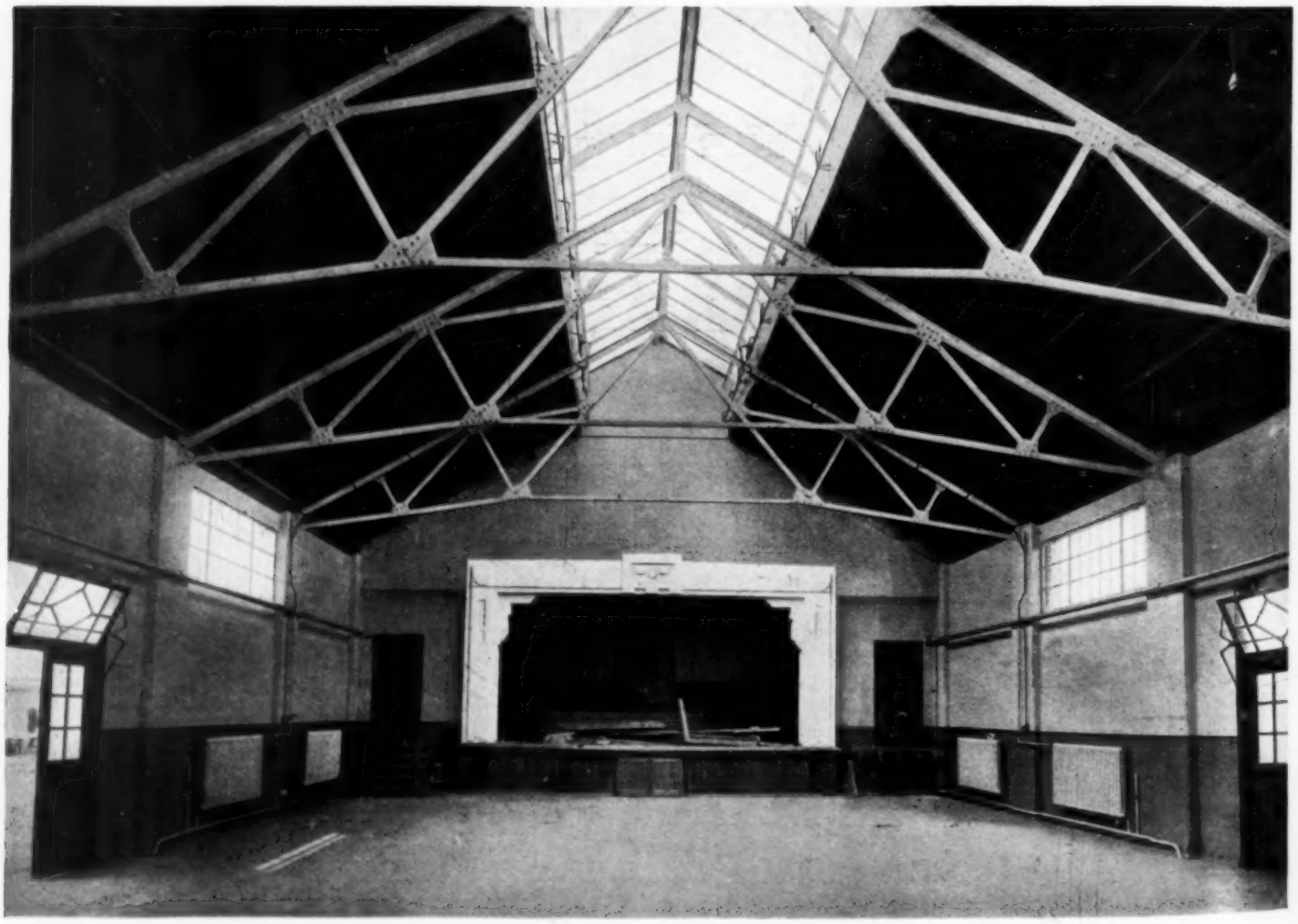


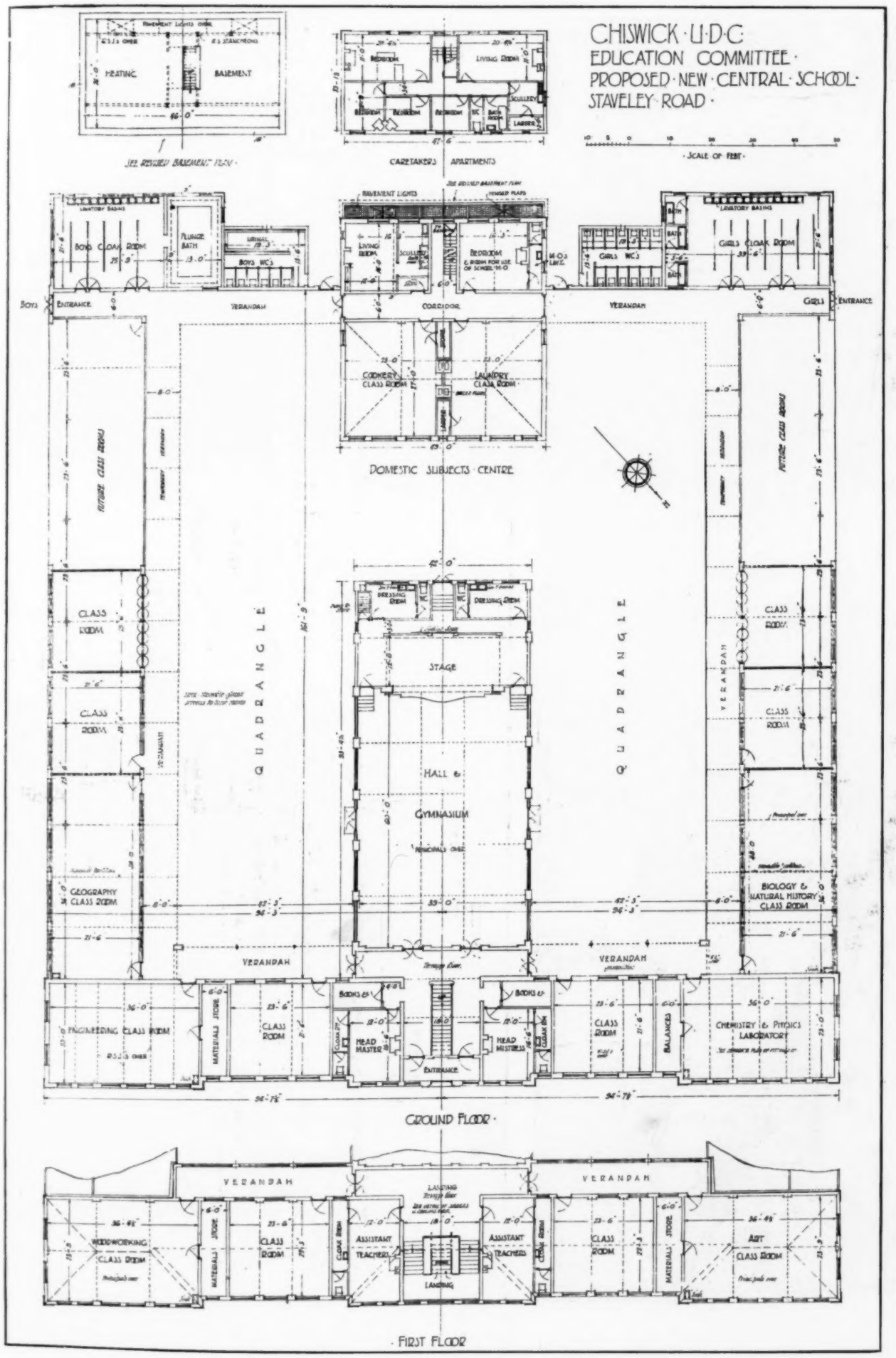
Staveley Road Frontage.



Hall and Gymnasium.

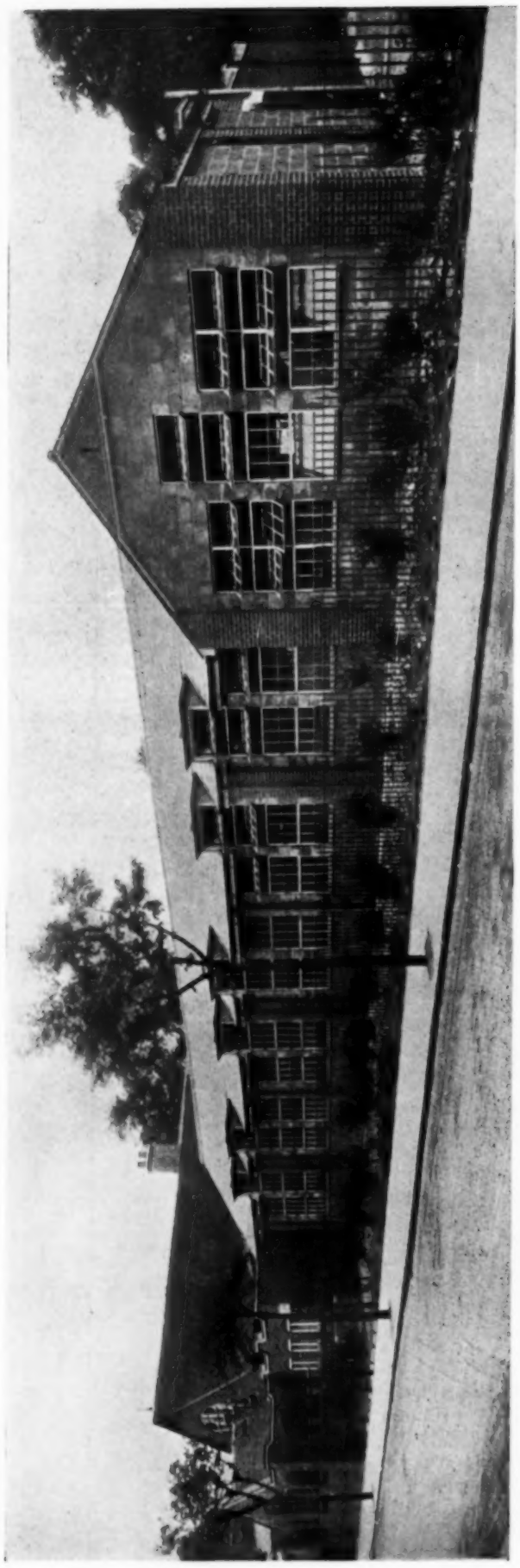
New Central School, Staveley Road, Chiswick.

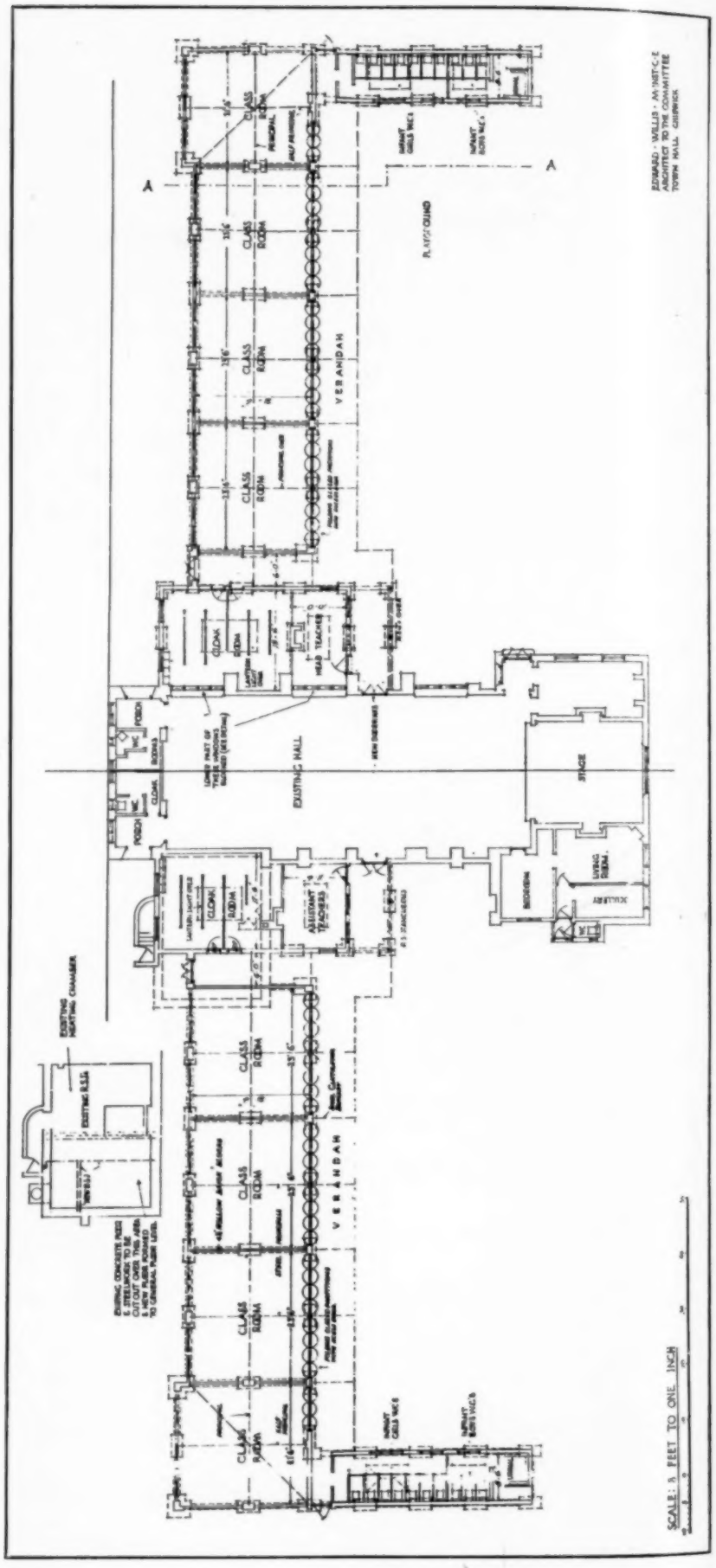
Mr. Edward Willis, F.S.I., M.Inst.C.E., Architect to the Council.



New Central School, Staveley Road, Chiswick.

MR. EDWARD WILLIS, F.S.I., M.Inst.C.E., **Architect to the Council.**





New Infants' School, Beverley Road, Chiswick. Mr. Edward Willis, F.S.I., M.Inst.C.E., Architect to the Council.

THE ARCHITECTS (REGISTRATION) BILL

After a debate lasting for two hours, the House of Commons on Friday was "counted out" during the second reading of the Architects (Registration) Bill. The discussion was therefore adjourned, and it is unlikely that further progress will now be made with the Bill this session.

Sir Walter Raine, the Unionist member for Sunderland, who moved the second reading, explained that the measure embodied all the amendments which were suggested by the Select Committee on the Bill of last year, and removed every reasonable objection which there previously was to the measure. The attitude of the R.I.B.A. was such that, if there were any further criticism of the measure, he, on their behalf, would be glad to give it consideration on the Committee stage. One objection he had heard was that everybody desired in his particular trade or profession to be registered, often to the detriment of the outsider. Every case of the kind ought to be treated on its merits, and careful consideration ought to be given to it in order to see that nobody was prejudiced or suffered an injury. At the same time it was necessary to bear in mind that in a profession like that of an architect long years had to elapse during which a person had to qualify. A person who desired to become an architect was well over 21 years of age before he was able to earn a reasonable living, whereas those engaged in trade began to earn a salary at the age of 16. It was a well-known fact that everybody in any particular profession was not fully qualified, but it was no part of the Bill to interfere with such people. All it did was to protect the public, and if, after the Bill was passed, anyone desired to appoint either an unqualified or a partly qualified architect, he would do so with his eyes open. Under the Bill, the title "registered architect" would only be able to be used by those who fulfilled certain conditions.

The R.I.B.A. had had its charter since 1834, so that it had had a fairly long career, and it was felt that to get what they wanted they must proceed by means of an Act of Parliament. Anyone who had read the evidence given before the Select Committee last year would have been struck by the tremendous amount of work which had been done to raise the standard of architects. The trouble was that, under the existing law, the members of an institution had a right to call themselves by a particular name or to use particular letters, but the law did not prevent any mushroom society from springing up, and, with or without examination, but on payment of a fee, the members were entitled to add certain letters to their names, so that they might appear to the public to be learned. There had been until recently two main objectors. The first had been the Institute of Builders, but he was pleased to say that they had withdrawn their opposition in principle, because they saw that the Bill was a useful one, and anything that they required would be done on the Committee stage. The other objection, which had not been withdrawn, was that of the Incorporated Association of Architects and Surveyors. From the evidence given last year, the public would see that this was just a new society. It had at that time no qualifications for people who wished to become members, and he was reading that week in its magazine that the executive had just passed a certain scheme of study. It would be seen, therefore, that this was a very new society—he thought it was two years old—and he was afraid that up to now it had been more noisy than useful. It set out in one document which he had received that there were 46 architectural associations in the British Empire. He believed that to be correct, but 44 of them were in association with the R.I.B.A., which left the 45th as the single opponent. It had sent out a circular, clause 5 of which contained the following passage:—"The true object of the Bill is not to benefit the public or practitioners, but to strike a blow at independent and progressive architectural associations, the membership of which is growing so rapidly." But the Bill did not interfere with any private person. All it said was that, if hereafter anyone desired to be called a registered architect, he should fulfil certain conditions for the protection of the public.

He had heard of another objection, and that was that the Bill might preclude a boy of poor parents from becoming qualified as a registered architect. The evidence given before the select committee last year entirely disposed of this fear. Last year, out of 115 candidates who presented themselves for the probationary examination of the R.I.B.A., no fewer than 60 began their career in the elementary schools, and out of that 60 no fewer than 56 started in Council elementary schools. If there were ability, poverty was no bar to anybody becoming an architect. The registration fee would not exceed one guinea per annum, which was in sharp contrast to the higher annual fees charged by institutes of solicitors, doctors, accountants, etc. Architects in the Colonies enjoyed the privileges which the architects of the Mother Country were asking for to-day in the Bill.

He would call attention to three of the clauses of the Bill. Clause 5 was an important one, dealing with those who should be admitted to membership forthwith should the Bill become an Act. The R.I.B.A. was not going to take that task on itself, but under the second schedule applications would come before a committee composed of 12 representatives of the Institute and representatives from various other institutes which were detailed, including the Incorporated Association of Architects and Surveyors. Clause 6, headed "Council to prescribe future qualifications for registration," dealt with the question of architectural education, which was also referred to in the first schedule. Here, again, this Incorporated Association of Architects and Surveyors had a representative. He understood from a document which he read the previous day that they were not satisfied with the amount of representation which they had, but they were a young society, and he could only put it down to the presumption of youth that they should desire to manage the affairs of a much older association. Clause 7 was the disciplinary clause, and the House would see how fairly the R.I.B.A. had dealt with that question when he told hon. members that before anybody could be removed from the register he had to appear before a committee, not composed entirely of representatives of the Institute, but on which only three out of the seven would be members of the Institute. There had to be a representative of the Minister of Health, a representative appointed by the president for the time being of the Law Society, one member appointed by the Incorporation of Architects in Scotland, and one member appointed by the Ulster Society of Architects. He thought he had said sufficient about the clauses to show how reasonable the Institute was in its desire to meet the wishes of possible opponents, and to see that no hardship was inflicted on anyone by the disciplinary clause. The present Bill removed every disability, or possible disability, which existed under the previous Bill.

Sir Clement Kinloch-Cooke, in seconding, mentioned the fact that he was chairman of the Select Committee last year. He explained that, briefly, the objects of the Bill were the protection of the public by ensuring the proper training of persons holding themselves out to be architects; secondly, the protection of the qualified as against the unqualified architect; and, thirdly, to provide an organisation for facilitating and developing architectural education for all persons. The objections of the co-operative societies had been met under Clause 18. There had been a fear that the Bill might set up a new close corporation and so make it difficult for a boy or girl of the working class to become an architect. That fear no longer existed, and had been entirely dissipated by the evidence last year of Mr. Barnes, who represented the R.I.B.A. There was no desire or intention to make the profession of an architect a close profession. The Bill merely restricted the use of the term "architect" and the use of the word "architectural" to people at present employed in the profession, and to persons who in the future had attained the qualifying standard. The opposition of the Civil Engineers had been withdrawn. He was afraid the Bill still had an opponent in Mr. Tasker, who seemed to think that the R.I.B.A. was not the proper organisation to be entrusted with the carrying out of the machinery of the Bill. For his guidance, as well as for the information of the House, he would point out that the R.I.B.A. had been entrusted with the training of architects and the control of architecture by successive Royal Charters granted by William IV., Queen Victoria, Edward VII. and his present Majesty. It stood at the head of a confederation of allied architectural societies, and among its members would be found the great majority of qualified architects practising in all parts of the Empire. Consequently, the House would see that the fears of Mr. Tasker were not well founded. When to that he added the fact that, whether domiciled in this country or overseas, all members had equal rights and were equally entitled to have their say in the government of the profession, and that some 8,000 persons were directly associated with the activities of the R.I.B.A., he thought the House would agree that that organisation had some claim to be regarded not only as a great British institution, but as an Imperial organisation and one fully qualified to be entrusted with the powers sought under the Bill.

After recounting the numerous countries that had set up some sort of statutory registration for architects, Sir Clement said that the Bill would protect the qualified architect from the competition of the unqualified person, and, incidentally, by the process of elimination, the profession itself would be saved from the risk that now assailed it of being placed in an undignified position by the wrongful acts, whether due to want of knowledge or otherwise, of persons describing themselves as architects but who, neither by training nor by education, were qualified for the work that they laid themselves out to undertake. The Bill would thus benefit architects themselves, and would also safeguard the general public. Already municipalities were finding it necessary to seek power for controlling the designs of buildings erected in their areas, and powers in that connection had been secured by Liverpool, Bath and Edinburgh. The formation of the Council for the Preservation of Rural England showed the urgency of creating and maintaining a body of competent architectural practitioners to whom local and other authorities could turn for advice. Only by that means could they make certain of securing the preservation of our countryside and prevent the continued repetition of the inartistic and badly constructed buildings that were now being erected in various parts of the country.

Mr. Tasker, who moved the rejection of the Bill, complained that whenever opposition was challenged before the Select Committee last year, it was suppressed by the chairman, Sir C. Kinloch-Cooke. When he (Mr. Tasker) wanted to investigate, it was regarded by the chairman as irrelevant. Whatever private views might be held, every member of that Committee was in a semi-judicial position, and one of the things to be observed by a chairman should be to suppress his desire to see a thing either recommended to the House or defeated. There was nothing in the terms of reference

New Infants' School, Beverley Road, Chiswick. Mr. Edward Willis, F.S.I., M.Inst.C.E., Architect to the Council.

to prohibit the Committee's exploring the ground and investigating the Bill very thoroughly, and neglect to do so seemed to be frustrating the authority of Parliament. The first mistake he found in the Bill was that it should have been described as a measure to protect the title of "registered architect." There was nothing in the Bill to protect the public against the unqualified and unskilled man. There was no architect who did not desire registration of some kind, but, unfortunately, neither the R.I.B.A. nor anyone belonging to it had been able to set up an acceptable scheme, because of the ostrich-like policy of the selected few who had formed the Council of the R.I.B.A. The Bill had revived all the old controversies which they thought had died down four years ago. One of his chief grounds of complaint was that the Council of the R.I.B.A. had not done their duty in ascertaining by referendum whether the proposals in the Bill were acceptable to the general body of their members. The object of the Bill was to make the R.I.B.A. the sole supreme professional organisation of architects. He believed that in a referendum the proposals of the Bill would again be defeated.

Great architects, like great painters, were born, not made. He wanted the door kept open for genius. Whether a person had passed through Oxford or through a Council school, he wanted the present generation and posterity to enjoy the great gifts which had been given them. If they looked round London, England, and the world, they would see the great edifices that had been designed by men who had passed no examination. Members of that House had been inundated with letters of protest from architects, begging them to oppose the Bill. Of all the evidence that was submitted to the Select Committee, none was more telling than that of Professor Beresford Pite, who pointed out that, so far as architecture was concerned, it was largely a matter of taste. He said that our greatest architects who were on the classical side during the Gothic revival would have been scorned. To-day no one would think of putting up a building like the Law Courts for legal purposes. That was in the period of Gothic architecture. We were now going through another stage. Personally, he thought that many of the examples of the housing schemes to-day included some of the most hideous structures ever built, and yet they had been done by accredited architects. They were designed by members of the R.I.B.A.

The Bill sought to give powers, not to the architects of this country, but to the Council of the Institute. That was not right. The whole of the people of the country ought not to be subjected to the domination of a few men who formed a council. It was neither in the interests of the public nor of the profession. The Bill meant nothing more nor less than the setting up of a professional protection association for a few men. It did not disqualify an unqualified man. There was not a single word in the Bill that would prevent the unqualified man from practising. The registration authority was a vested interest. In the second schedule there would be found a packed committee. They had a certain number of men attached to them, but there were 12 members to be appointed by the R.I.B.A. Men were to be nominated by certain bodies, but the R.I.B.A.'s men were to be appointed, so that, although men might be nominated, they might never be appointed. A close investigation of the Bill revealed that the recognition of other people was totally inadequate, and he was inclined to take the view of the President of the Institution of Civil Engineers, who, in reply to the suggestion "You will be represented," said: "Well, what is the use of having one representative of the Civil Engineers; we should be swamped? Take us out of the Bill." And they were taken out of the Bill accordingly.

Who were the Discipline Committee? It was by no means clear in Clause 7; but what was perfectly clear was that every man seeking registration, and every man seeking to enter the portals of the R.I.B.A. was to be ... the mercy of the Council of the R.I.B.A. In Clause 6, the Council were to prescribe the qualifications. It had been said that the R.I.B.A. would be compelled to get the sanction of the Privy Council to those regulations, but he submitted that the Bill said nothing of the kind. If a man was to be admitted by examination, then the Privy Council would have to approve alterations, but if the R.I.B.A. thought fit to double, treble or quadruple their fees, the Privy Council had no voice whatever in regard to it. The R.I.B.A. could admit anyone they liked by an increased payment of fees for admission to the Institute. That was neither in the interests of the public, nor of the profession. Clause 9, lines 21 to 25, showed that the R.I.B.A. might take a man's livelihood away, and, having done so, they need only notify him within one month of his ruin. That was not a thing that should be referred to a Committee of that House to adjust. If the Bill was passed as it stood, it would bring about the ruin of the R.I.B.A.

Referring to the educational ladder, Mr. Tasker said that while there were many scholarships, and while it was true in theory that a boy from a Council school could advance and become an able and eminent architect, he was going to tread a very rough path unless he could supplement his means by attending architectural classes which did their work in the daytime. The architectural schools where the draughtsmanship was done in the daytime were accepted schools, but a school like the Regent Street Polytechnic, whose students had to work for their living during the day, and go to the school at night to learn technique, was not a recognised school. That sort of thing should have been investigated by the Select Committee, who should also have inquired whether the privileges and rights enjoyed by the R.I.B.A. had been properly exercised. He wanted to see the Bill either a practical measure, or else abandoned. He did not want to see men flooding into the profession, which was at present overcrowded, and in which some men offered their services at less wages than those paid to building trade operatives. Why could not the House endeavour to make the men who were to be responsible for the spending of money, and for the safety of life and limb, thoroughly qualified and properly trained for their work? Unfortunately, the Bill did nothing of the kind. All it did was to say that if a man paid a certain fee to a certain institution, thereafter, as long as he continued to pay that fee, he might describe himself as a "registered architect." The Bill was futile and useless, and would put in the hands of the Council of the R.I.B.A. powers which were possessed by no other body in the world.

Col. Wedgwood, a Labour member, in seconding the rejection, said that by the time they got to Clause 11 of the Bill, they found there was nothing on earth the Council of the R.I.B.A. could not do without an Act of Parliament at all. They were perfectly entitled to draw up a register, and to make all these rules and regulations. All they came to Parliament for was what was found in Clauses 11 and 13. If anybody used the title of "registered architect." without being entitled to do so, he could be fined £50 or sent to gaol, and if anybody made a false representation to get on the register, he would go to prison. If it were not for those two clauses, the whole Bill would be unnecessary. The R.I.B.A. should not be given those powers, first, in the interests of the working-class people, who went through the profession through the ordinary apprenticeship in an architect's office; secondly, from the point of view of the public; and, thirdly, from the point of view of the vested interest of the civil engineers, whom he represented. Why on earth should not every architect register? There was at present no difficulty in anyone who was practising any form of architecture from registering. He criticised the suggested disciplinary court, and asked whether it would be considered unprofessional conduct for a registered architect to accept fees lower than those fixed by the R.I.B.A. He feared that this sheltered profession would be enabled to extract a higher charge from the industries of the country.

Sir C. Kinloch-Cooke said there had not been any compulsory scale of fees fixed by the Institute, and never would be.

Col. Wedgwood said he was very pleased to hear that, but, after all, Sir Clement was not the Institute! The standard form of agreement entered in by the R.I.B.A., the Institute of Builders, and the National Federation of Building Trade Employers, would, he feared, close the profession and enable it to extract a higher percentage of fees than was the case at present, and would prevent any sort of undercutting in connection with the building profession.

Brig.-Gen. Warner said that the Bill was a simple one, and would prevent the victimisation of the public by the untrained architect, and would also protect the trained architect. In promoting it, the R.I.B.A. had no selfish ends to serve. The Bill did not add one member to that body. In setting up a Board of Architectural Education, which should control the training and examination of registered architects, it was doing a service not only to architects, but to the general public.

Mr. Smith-Carrington, who opposed the Bill, felt that it was based on very good intentions, but it was a very jerry-built structure. It was built on unsound foundations, and disclosed a decadent style. The lay client very often did not want an architect, but, if he did, he would certainly not get him off a register. He would no more think of choosing his architect from a long list on a register, than he would of choosing his medical man from a medical directory. He would rather take such advice from his friends and such other sources as he was able to obtain. Very often the lay client, instead of putting his work in the hands of an architect, simply went to an ordinary builder, and the Bill did nothing to influence that. He would not think that an architect in established practice would think that he had got any cash value or had added a cubit to his stature by coming on to a register, along with other people qualified to be on that register. There was by no means unanimity among architects themselves for the Bill, and for that reason and other reasons he opposed it.

Sir George Hume, who described the Bill as one "to obtain a satutory trade label," said he did not know if that label would be sufficient to drive out of the market all other architects if they failed to have the word "registered" in front of their name. Everything would depend on the reputation of the Council, which had such powers vested in its hands, as to whether the word "registered" had any value or not. If it had, real service might be done. If not, other architects would have much of which to complain.

While Mr. Gardner, a Labour member, was speaking in support of the Bill, Mr. Tasker called attention to the fact that the necessary quorum of 40 members was not present. Only 32 members could be found, and, after the lapse of the customary two minutes, the House "stood adjourned," and the debate thus terminated abruptly.

County Hall's North Wing.

It has just been reported to the London County Council that the cost of erecting the new wing (northern end) of the County Hall is estimated at £657,000, but, although the foundations of concrete are already in position, tenders have not yet been asked for the building of the wing. The new north wing is the only part of the building unfinished. The war stopped the invitation of tenders, but recently the L.C.C. drew up plans and consulted the Finance Committee. The Finance Committee has now decided, however, that in view of the present known commitments on capital account, and especially the cost of the new Charing Cross Bridge, the time is not opportune for proceeding with the work.

THE REPAIR OF ANCIENT BUILDINGS—X.

By A. R. POWYS, A.R.I.B.A.

The Surface Treatment of Old Oak of Half-timber Houses.

There is evidence that the custom of darkening the oak work in half-timber houses did not begin before the end of the seventeenth century. In many unrestored half-timber houses the timbers are lime-washed. It is difficult to say whether this finish was the original, or whether the oak was left its natural colour while the panels only were whitened. The Society for the Protection of Ancient Buildings holds that the oak should not be stained dark; it should either be brushed down and left clean; or with the panels it should be whitened. This opinion, I find, is confirmed by most who have experience in the treatment of these buildings.

The repair of the oak framing itself may be done as is usual in carpentry and as is suggested in the article dealing with timber roofs. Where new timbers must be used they may be left from the saw or adzed. It is Mr. Weir's custom to let the saw marks show and only to do such other work to the timber as may be necessary to secure proper joints. A number of other architect's prefer that all new timbers should be finished with the adze, but as this practice seems to be derived from a desire to revive an old method of dressing timber, now little used, rather than from any practical advantage, the writer feels this tooling to be an affectation and therefore considers that it is better avoided. The adze is a valuable tool, but in this practice it seems abused. It is, for instance, useful to remove sapwood by cutting chamfers from the angles of new beams. And the removal of sapwood from structural timbers is important, for it is there that the woodworm usually begins its destructive work.

The repair of external oak framing of a "half-timber" building differs in one respect from that of a roof, namely, in that it is exposed to the weather. For this reason it is desirable as far as may be to avoid cutting tenons or other holes in the upper sides of the timbers. Examination of old walls will show the joints where rot usually starts and new joints should be designed to withstand rather than to encourage decay.

But beside the oak-framed walls which were used in England until the end of the seventeenth century, there are a number of later and smaller buildings, tile-hung, weather-boarded or plastered, where pine and fir are used for the structural members. The repair of such framework may be done in the same way as is recommended for the older oak work. It has, however, been suggested that the substitution of concrete or ferro-concrete for the timbers might be a convenient and at the same time a permanent method of repair. Such a case has come to the notice of the writer, where the timbers were affected by rot, and where the use of concrete packed into the spaces originally occupied by the deals appeared a reasonable and lasting way to repair the faults. Indeed the use of concrete in such positions suggests a great variety of methods which might be employed in the repair of those buildings of this class which deserve to be preserved for their beauty or other desirable qualities.

Defects in Masonry, Brickwork, and Walls Generally, Due to Surface Decay.

Surface decay of stone or brick is due to a great variety of causes. Each material differs in composition; even stones taken from the same quarry vary, and when these are subjected to conditions which again differ, and this sometimes in a single building, the complexity of the problem becomes apparent.

The agents of decay are organic, mechanical and chemical. Organic decay is chiefly due to visible vegetable growths, but attack by bacteria is now also suspected, but is not as yet definitely established. Mechanical decay is caused by expansion and contraction due to changes of temperature, by frost, by wind and wind-blown sand, by damage due to carelessness or done on purpose, and by ordinary wear. Chemical decay is principally due to the presence of sulphur gases and ammonia carried into the air by coal smoke and deposited in the stone, brick, or mortar by rainwater.

In all cases of surface decay *cure* is at present very difficult, if not impossible, but partial or nearly complete *prevention* is possible and should be attempted, for at the worst the causes of decay may be interrupted or hindered. In short, decay in building materials should be treated on the same principles and with the same intention as are the ailments of human beings. The life of a building is longer than that of man, but in the end both become dust. It is for us to secure the longest possible life for that which is fine and noble. Neither does this desire for the security of these conflict with the urge to have new and gracious buildings about us.

Vegetation on Buildings.

Decay in stone or brick caused by visible vegetable growth is mainly indirect. Lichens and mosses draw nourishment from the stone itself, and may secrete harmful acids, but they do these things to so small an extent that their powers of damage may be ignored. Mosses, because they hold moisture, may sometimes help frost to break up stone, or may aid the entrance of harmful chemical agents, but because they seldom grow on badly decaying or crumbling stone they are rather a proof of soundness than a sign that precautions should be taken. Because these small plants do little harm, and because they add colour and quality which few fail to admire, they may be preserved.

In regard to this question Mr. Noël Heaton advised the Society for the Protection of Ancient Buildings that lichens can be removed from tombstones by spraying or brushing with a weak solution of zinc fluosilicate, which hardens the stone at the same time. But he wrote, also, "The destructive effect that grey and yellow lichens usually develop is more than counterbalanced by the protection they give to the stone," and advised that these plants should be left alone, except where they interfere with the legibility of inscriptions, etc.

It is the larger vegetation which is damaging, first to the structure itself, and, secondarily, to the surface materials of which the structure is built. Shrubs, young trees, and especially ivy, send their roots into the joints of a wall and draw nourishment from the mortar, causing it to break up. While the roots increase in size, disintegration accelerates, for as they grow they displace more material, rain penetrates the joints more easily, and the plant of its own activity increases the source by which it thrives. Sometimes even fine rootlets penetrate the minute crevices of the stones themselves, and, as they grow, exert a force that may split hard stone. Like many another cause of decay, the evil which larger vegetation brings attacks the heart of a building, and with the heart destroys the surface. It is because its removal must be begun from without, although the damage caused by its roots within must be cured when repair to the building is done, that the subject is considered here with surface decay. For, although the roots should be traced and removed even from the very centre of a wall, first of all the branches of the plant must go. All growths that draw sustenance from the joints and heart of a wall should be cut down.

The Removal of Ivy and Other Creepers.

Ivy, of all English plants, is most damaging, and it may best be removed in the following manner. The stems should be severed where convenient; the whole of the plant, from five feet or so above the ground to the bottom of the roots, should immediately be removed, and the rest should be left to wither. When the stems are dried and shrunken, the whole plant should be lifted from the wall. To pull it off before it has withered may disturb the surface unnecessarily. And in cutting the ivy it is well to order that saws and not axes shall be used, for with the careless use of axes carved, moulded, and other stonework may be damaged. As to those plants which root in a wall and take no nourishment from the ground, they should at once be cut down, and when repairs are being done their roots removed. Until the building is cleared of the larger forms of vegetation, all the defects cannot be seen, and the survey cannot be complete nor the necessary repairs decided on.

Those who admire creepers on old walls may be distressed by these recommendations. They should remember that theirs is a selfish pleasure, for unless it is impossible for these plants to obtain nourishment from a wall they will send roots between the stones and so hasten its downfall. Besides ivy and young trees I have seen damage caused by honeysuckle, by wistaria and by Virginia creepers of all kinds. If creepers are allowed to grow at all the joints between the stones, etc., must be impervious to moisture, for thus it becomes impossible for these plants to get nourishment except from the ground. And it is not to walls alone that these plants do harm, for if they are neglected, and at any time that may happen, they are apt to reach the roofs, the most vulnerable parts of buildings. Therefore, those who have the care of buildings which are valuable to more than themselves, either on account of beauty or age or workmanship, should see to it that there is no risk of damage from this source.

Traditional Methods for Treating Surface Decay.

With the exception of physical damage, of changes due to temperature, and of wind-borne agents, the causes of most surface decay are conveyed by, and are due to, the presence of water. And this agent of decay acting in conjunction with those it carries, does its evil work by effecting actual changes in the structure of a material or by causing differences of pressure within it. The freezing of water in saturated stone, brick or mortar, is only more apparently damaging because its effects are more sudden. That water-borne solvents are the chief cause of decay may not be apparent at once when it is remembered that stones which are inaccessible to rain powder away. But nevertheless this is so, for within a building the products of burning gas (of which water is one) attack stone through the condensation on its surface. In a sheltered cloister mist-borne acids condense on the surfaces of vaulting and walls; and in neither case is there any chance that these active agents will be carried to the ground in a downpour of rain. Owing to the complex nature of the causes of surface decay an attempt to check it by chemical means is very difficult, and as yet it seems that only the elements of this science are understood. It appears likely also that even when chemical information on the subject is complete, the older well-tried methods which have developed with the development of building traditions will for ever be the necessary base from which to work. It is, therefore, our first object, not only in these articles, but in the actual work of repair, to decide how the penetration of water may be prevented, and how exposed surfaces may be made to throw it off quickly, and this by the use of traditional methods. This is the essence of all surface protection. To increase the resistance of the surfaces of affected material itself is a secondary matter, though an important one. Yet it is in discovering how this may be done that chemical know-

ledge can be useful; and in this work rapid development seems immediately impending.

It has already been said that the object of surface repair is to avoid renewal, so that the individual qualities of an ancient building may be preserved. To obtain this end I have found it helpful to consider each stone, each brick and each joint on a decaying surface as though it was the only one to be treated. If one sets out to preserve a stone it is not renewed but treated individually. If one sets out to preserve a wall of stones one is apt to suggest renewal; but a wall is made of separate stones, and if they are individually preserved the wall is preserved entire with its original and acquired character. Indeed, this attitude of mind lies at the root of the preservation of ancient buildings. It is this difference which distinguishes the repairer from the commercial contractor, whether he deals with "church" or other work.

SOCIETIES AND INSTITUTIONS

ARCHITECTURAL COMPETITIONS: ASSESSORS' AWARDS.

We take the following excerpts from a statement on this subject given in the current issue of the R.I.B.A. "Journal":—

All architects who take part in architectural competitions are reminded by the Council of the R.I.B.A. that participation in a competition is a definite acceptance of the principle that the award of the assessor is final and binding upon themselves as well as upon the promoters, and that any competitor who feels that he has real ground for dissatisfaction with an assessor's award should communicate with the Secretary of the R.I.B.A.

The Council of the R.I.B.A. desire to remind all architects who may be appointed to act as assessors of architectural competitions that observance of the following points is vitally important for the satisfactory conduct of competitions:—

1. While the R.I.B.A. are prepared to advise the assessors if necessary on the general regulations governing the conduct of competitions, the assessor alone is responsible:

(*a*) For the drafting and presentation of any particular set of conditions and instructions and replies to competitiors;

(*b*) That the general regulations are not infringed therein.

2. Inasmuch as assessors' awards will necessarily be final and binding on all parties, assessors must refrain from premiating any design—however high its architectural merit may be in their opinion—which contravenes any of the conditions and replies which they have themselves drawn up for observance by competitors, and thus avoid any ground for legitimate criticism of their awards after publication.

3. *Accordingly the value and importance of drafting conditions and replies to questions so as to leave the maximum latitude to competitors in the solution of the problem should not be overlooked.*

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

Mr. Ernest C. Bewlay, the president, was in the chair at the annual dinner of the Birmingham Architectural Association at the Queen's Hotel, Birmingham, on February 24. Among those present were the Lord Mayor (Alderman A. H. James), the Minister of Health (Mr. Neville Chamberlain), and Mr. Walter Tapper, P.R.I.B.A. Proposing the toast of "The Royal Institute of British Architects," Mr. Ernest C. Bewlay said the Institute was founded about 1834, and it had grown to be a powerful organisation. He thought there were some people who regretted to find, as they thought, one of the arts becoming professionalised; but architects had to live, and they thought they could live best by combining with other brethren. Replying, Mr. Walter Tapper said the Birmingham Association, founded about fifty years ago, was one of the most energetic and influential of the associations, and its members were renowned throughout the country. That Birmingham was possessed of a remarkably distinguished body of architects was proved by a glance at the Institute's calendar. Birmingham fifty years ago gave a lead to the great cities of the country, and showed what an enthusiastic Corporation could do in the way of architecture. It had followed that up by establishing a Civic Society which had done good work in Birmingham and equally good work throughout the country. In Birmingham there had recently been erected two notable buildings—the Masonic Hall and the Hall of Memory—but the city still lacked a cathedral, and that was a defect which Birmingham should remedy. He hoped the architects of the city would have still further opportunities of showing their power in the development of the civic centre. If the scheme went through it would give an excellent opportunity for fine architecture. As President of the Royal Institute of British Architects he took the opportunity of congratulating Mr. Chamberlain upon the keen interest he had taken in the great housing question, which he had managed with great success, and on the help he had given in preserving the amenities of rural England.

Proposing the toast of "The City," Mr. Neville Chamberlain said he had heard the toast of "The City" proposed in many ways, but he had never heard a word about the beauty of its outward form. The curious thing was that until quite recent times that fact never ruffled its complacency. They could point to no street worthy of a great city and to no group of buildings worthy to be compared with those of Athens, Rome, Vienna, or London. But it was beginning to dawn upon the public mind that a change was necessary. Whether they were better educated that their forefathers or whether they were revolting against ugliness did not matter, but it was certain they desired a greater restraint in the landscapes they made for themselves. It was certainly unfortunate that they were fifty years too late. As the Minister of Health responsible for the provision of housing accommodation he was gratified with the phenomenal rapidity with which houses had been springing up, but that gratification had been diminished by some of the developments that had degraded and vulgarised the beautiful English countryside. The desire for beauty was like the desire for economy—everybody would like to see restrictions imposed upon other people. The Lord Mayor, in responding, said they were proud of the city and any assistance the architects could render would be gratefully received.

The toast of "The Birmingham Architectural Association" was proposed by Mr. Percy E. Thomas, and responded to by Mr. S. N. Cooke. The toast of "The Visitors" was proposed by Mr. A. T. Butler, and was responded to by Mr. R. Dennison, M.P., Mr. G. N. Guest, and Mr. H. S. Fairhurst.

SOUTH WALES ARCHITECTS.

At the ninth annual meeting of the western branch of the South Wales Institute of Architects, held at the Hotel Metropole, Swansea, Mr. Charles S. Thomas, F.R.I.B.A., President of the South Wales Institute of Architects, presided in the absence, owing to illness, of the branch chairman, Mr. C. Russell Peacock. Mr. J. Herbert Jones, F.R.I.B.A., Swansea, was elected to the office of chairman for the ensuing year. The new chairman has been honorary secretary of the branch since its inception nearly ten years ago.

The following officers were also elected:—Honorary Secretary, Mr. G. R. H. Rogers, L.R.I.B.A.; Honorary Treasurer and Librarian, Mr. Oliver S. Portsmouth, A.R.I.B.A.; Honorary Auditor, Mr. Ernest E. Morgan, A.R.I.B.A.; Committee, Messrs. H. C. Portsmouth, F.R.I.B.A., Charles S. Thomas, F.R.I.B.A., C. Russell Peacock, F.R.I.B.A., Sidney R. Crocker, L.R.I.B.A., and Mr. Edwin Smith, A.R.I.B.A. (Neath); Corresponding Member, Captain D. F. Ingleton, L.R.I.B.A. (Haverfordwest); Students' Representatives, Messrs. C. W. Geddes and B. W. Ellis, P.A.S.I.

The following officers were elected to serve on the Council of the South Wales Institute of Architects:—Messrs. J. Herbert Jones, Oliver S. Portsmouth, G.R.H. Rogers, Sidney R. Crocker, C. Russell Peacock, Edwin Smith, D. F. Ingleton, and (as Associates' representative) Mr. C. W. Geddes.

The President of the South Wales Institute of Architects then presented prizes to the students who were successful in the annual competition for measured drawings. The prize-winners were Messrs. W. Gwyther Thomas, Haverfordwest; Elwyn J. Rees, Pontardawe; and D. Eric Stephens, Swansea. Before the meeting, the members partook of tea, kindly provided by the retiring chairman.

The western branch of the South Wales Institute of Architects has increased its membership during the year to 32 Fellows, 20 Associates, and 21 Students from all parts of West Wales.

SCOTTISH SURVEYORS.

The need for professions having central organisations was referred to by Lord Fleming at the annual dinner of the Faculty of Surveyors of Scotland, held in the Caledonian Hotel, Edinburgh. Mr. Colin B. Cownie, the retiring president, was in the chair, and amongst the company of about 100 present were Dean of Guild Bruce; Messrs. G. P. K. Young, F.R.I.B.A., E. J. MacRae, W. A. Macartney, W. W. Finlayson, J. Wilson Paterson and Bailie P. H. Allan.

Dean of Guild Bruce replied to the toast of "Municipal and Local Authorities," which was proposed by Mr. J. H. Allan, the new president of the Faculty. The Dean of Guild Court, said Mr. Bruce, had been disappointed by the small number of factories passing linings, and even extensions, in their Court. They wanted to see industry making strides forward in Edinburgh. He could not understand, when he compared the local rates of six of the principal Scottish towns, why industries were not attracted to Edinburgh.

Lord Fleming, proposing "The Faculty," said every profession ought to have a central body such as they had formed, embracing all the members of the profession, and having powers of control over the members. A body such as the Faculty of Surveyors not only protected the legitimate interests of the members of the profession, but was also of great benefit to the general public, because it ensured that those who exercised the profession of surveying had the necessary knowledge, and also the necessary experience, to enable them to discharge the important and responsible duties devolving upon them. It was a very much better system that professional bodies should have the right of prescribing the regulations under which new members were to be admitted to the profession, and also of prescribing the examination which these new members had to pass before they were admitted to the profession. The Faculty had also a great value in that it ensured to a considerable extent a uniformity of professional attainments.

The Chairman replied.

Other toasts included "Architectural Associations," submitted by Mr. W. M. Baird, and responded to by Mr. G. P. K. Young; and "Building Trades," proposed by Mr. Thomas Scott, and replied to by Mr. W. W. Finlayson.

The fifteenth annual general meeting of the Faculty was held in the Caledonian Hotel, Mr. Colin B. Cownie presiding. Mr. John H. Allan, Glasgow, and Mr. W. M. Baird, Edinburgh, were appointed president and vice-president respectively. The secretaries, Mr. W. Johnstone, writer, Glasgow, and Mr. D. E. Wallace, C.A., Edinburgh, were re-elected. The following new members were admitted:—James Gardiner, Edinburgh; John Gray, Glasgow; William Grierson, Edinburgh; James Jerdan, Edinburgh; and Edward William Todd, Edinburgh.

THE SURVEYORS' INSTITUTION

THE ESTIMATION OF DAMAGE IN ANCIENT LIGHTS DISPUTES.

Mr. P. J. Waldram, F.S.I., read a paper on this subject at a meeting of the Surveyors' Institution held on Monday, March 5. There was probably in this country, he said, no more fertile cause of dispute between neighbours than proposed obstruction of light and air by the raising and extension of buildings in closely-built towns. The adjoining owner or occupier almost invariably believed quite honestly that he would suffer a severe permanent and intolerable injury to the reasonable user of his premises. The building owner, no less sincerely, generally thought that he was being blackmailed. Either view, sometimes both, might be correct; but the circumstances of almost every case differed, the only factor which one could confidently expect to find as a common denominator was that of the views of each side being more or less exaggerated. It was very frequently the duty of surveyors to compose such differences by negotiation, by effecting suitable modifications of the proposed building where the injury threatened would be serious or intolerable, and by estimating and agreeing monetary compensation where such was appropriate or acceptable. In cases where friendly settlement proved to be impossible, it frequently fell to surveyors to assist the courts, by evidence as to the facts, *qua* light, and their effect upon value. The first operation in these quasi-medical duties was to diagnose the case, and much of the trouble, unnecessary litigation and injustice associated with the term "ancient lights" had arisen from a lack of exact knowledge.

Twenty years ago daylight had not been measured, and no attempt had been made to define its adequacy for interiors, far less to standardise it. All expert evidence was of necessity mere guesswork, with the guesser wholly and blissfully unaware that his own eyes unaided were, generally speaking, useless as a measuring instrument. This difficulty, however, might now be considered to have been overcome. Standards of good, adequate and inadequate light were firmly established, whilst simple methods had been evolved, widely used and as widely published, of ascertaining, of predicting, and of depicting the facts of any case, however complicated. The accuracy of these methods had survived critical investigation by the National Physical Laboratory, Teddington, and it was possible to obtain from H.M. Stationery Office a Government report (Technical Paper No. 7, Illumination Research Committee, Department of Scientific and Industrial Research) which placed them beyond dispute. Those who were sufficiently interested to go more deeply into fundamentals could obtain the necessary material in papers read before the Illuminating Engineering Society in May, 1923, and the R.I.B.A. in 1925.*

Complete knowledge of the tools which we used was, of course, always desirable, but it was by no means essential to their employment. A great deal of scientific knowledge went to the manufacture and calibration of ordinary clinical thermometers, but the physician or the nurse did not necessarily need to possess it. Inwood's Tables were produced by means of abstruse mathematical processes, but surveyors could use them without being competent to compile them. Similarly the proof of the accuracy of the labour-saving diagrams by which problems in daylight illumination could readily be solved might involve higher mathematics, yet their accurate employment in the solution of daylight problems was well within the capacity of any ordinary schoolboy. They would therefore be relieved to hear that only a brief description was necessary of the methods employed to elucidate the facts of any problems in daylight illumination by the modern, or, as it is sometimes called, the scientific method. If the term "scientific" indicated anything involving special knowledge, this was a misnomer. But in so far as scientific treatment presupposed the accurate employment or logical common-sense, it might perhaps be employed.

The basic principles of the methods employed were simple and apparently self-evident, yet neglect of them had, in the past, led to much muddled reasoning and inaccurate evidence, and was doubtless largely responsible for the well-known definition of an expert witness. They were as follows:—

(1) That the material illumination of any interior position could never be other than a proportion, generally a surprisingly small proportion, of the light existing simultaneously out of doors, and could only be expressed as such. Natural illumination could not be expressed as being of any fixed value, as was the case with an interior lit from artificial sources, such as 1 ft. candle (the illumination obtained from one candle at a distance of one foot), or 2, 5, or 20 ft. candles. Whatever it might be at one moment, it would almost certainly be something quite different an hour or so later. Sometimes in windy, changeable weather it would vary by several hundreds per cent. from one minute to the next.

(2) That the light by which objects were rendered visible was not the light which fell on them, but the light which was reflected from them into the eyes of the observer. The useful light in an office was not the light which an observer noted when he walked into the room and looked out of the window; nor was it merely the light which fell on the table. It was the light which could be reflected from books, papers, drawings, etc., into the eyes.

(3) That the human eye was generally quite unconscious of huge percentage differences in daylight.

(4) That with a given sky brightness the useful light at any interior position depended primarily upon how much sky could be seen from that position through the windows, and how high that sky was above the horizon.

Light reflected from external objects and from the walls and ceilings of interiors was very seldom sufficient *per se* to supply light reasonably adequate for ordinary purposes.

(5) That any definition of adequacy in daylight illumination must of necessity cover the condition of moderately dull weather such as a wet day in summer, when the visible sky was fortunately practically uniform at all aspects. In so far, therefore, as adequacy could be defined as adequacy in moderately dull weather—and no other criterion would appear to be possible—we might neglect aspect and sun and presuppose a uniformly grey sky.

Standard Sky Brightness.

The brightness of the sky on such a moderately dull day had been standardised, at least for this country, by the National Physical Laboratory at 500 ft. candles, *i.e.*, such a sky brightness as would cause a white card open to a complete hemisphere of sky (as when laid on a flat roof higher than all surrounding buildings), to be as bright as it would be were it exposed to a measured illumination of 500 ft. candles; or when exposed to half a hemisphere of sky (as when laid upon the sill of an unobstructed window) to be as bright as it would be were it exposed to a measured illumination of 250 ft. candles.

Sill Ratio.

Clearly if daylight illumination at table height could correctly be expressed as a ratio of the light falling simultaneously upon any unobstructed window-sill, the difficulty caused by the violent fluctuations of daylight disappeared, provided that all our ideas of adequacy of daylight be confined to some definite condition of moderately dull weather such as a wet summer day. Under such conditions a sill ratio of 1 per cent. would always represent 2½ ft. candles, and the fairly well-known legal "grumble point" of 0.4 per cent. sill ratio would always mean 1 ft. candle.

Having dealt briefly with the history of the subject, the lecturer continued:—Ability to measure existing conditions was one thing; ability to predict the result of altered conditions was quite another. Disputes between neighbours over ancient lights demanded some exact, simple, and speedy method of predicting the effect of proposed obstructions. Screen tests were not always feasible, and were seldom conclusive except in cases which were obvious without them.

Many ingenious methods had been devised, but had proved to be either impracticable or inaccurate. One was forced back on the simple but tedious process of setting up from a number of interior positions geometrical projections of the windows and of what sky or obstruction could be seen through them on diagrams like those used for sun (Figs. 7 and 8), calculating the light by laborious applications of Lambert's law. This took considerable time, but it had to be done. The flat projection of a quarter sphere used served very well for ascertaining obstructions to possible sunlight; but sunlight, valuable as it was, was separate from, and had little or nothing to do with, the adequacy or inadequacy of light, because the latter must be sufficient, not only when the sun was shining, but also in moderately dull weather, such as a wet but not thundery day in summer, when it was reasonable to expect adequate light.

Far too much importance was often given by architects and surveyors to sun or aspect, not only for its own sake, but as indicating obstruction to light or the reverse. But on a grey day all parts of the sky were alike, and all criteria of accuracy must therefore be applied to the condition of a grey uniform hemisphere of sky. For so long as the only known method of depicting angular projections of the sky was to plot them on the ordinary flat projection of a quarter sphere marked with 10 degrees angular divisions of celestial latitude and longitude, as used for sun diagrams, direct measurement of light from plotted areas of sky was impossible. It had to be deduced by tedious and intricate adjustments. Not only did every one of those 10-degree squares from horizon to zenith represent a different amount of actual sky area, but every measured degree differed in its lighting capacity by the operation of Lambert's law, so that 10-degree squares near the horizon represented large areas of sky comparatively useless as a means of affording light vertically on to a table, whilst 10-degree squares nearer to the zenith represented less sky but of much greater value.

Very hard was the lot of the expert witness at that time who desired to predict accurately and had to make all the necessary corrections. An enormous amount of uncongenial work went to the preparation of every contoured plan like Figs. 4 to 6, showing the disposition of good, adequate, and inadequate light under given conditions of obstruction. But contoured plans rapidly became popular and even indispensable. Counsel and judges could grasp them instantly, and expressed in no uncertain terms their preference for them as compared with the old system of flexible opinions based on sill angles, which latter were of little use and less reliability. The demand for contoured plans soon extended beyond the Chancery Division of the High Court to provincial courts like the Palatine courts of Lancashire, to the Scottish courts (which, contrary to the usual opinion, did have to determine ancient light disputes, and without the assistance of the English Prescription Act), and more lately, under the new powers of injunction, to County Courts. Fortunately, before the demand became too insistent, the writer and his son, but chiefly his son, after many trials evolved the adjusted flat projection of the quarter sphere of sky which afforded the light received by

* "Illuminating Engineering" (1923), Vol. XVI., p. 90 (32, Victoria-street, or Batsford's, Holborn); "R.I.B.A." (1925), Vol. XXXII., p. 405 (9, Conduit-street, W.1)

an unobstructed window sill shown on Fig. 2, in which all the angular scales were so adjusted that the area of sky represented by one square inch anywhere on to a diagram so adjusted had precisely the same lighting value. If, therefore, such a diagram be drawn 20 in. by 10 in., or 200 square inches in area, every square inch of sky projected on to it represented 0.5 per cent. of daylight sill ratio. The mathematics which proved its accuracy (*Ill. Eng.*, Vol. XVI., Batsford) might appear to be a little involved, but were really quite simple. In any case its use and also its construction were simplicity itself. As would be seen on Fig. 2, all that was involved in its construction was a semicircle drawn at one end and divided into degrees. These, projected horizontally, gave vertical angular divisions of one-half the amount, the horizontal angular divisions being a simple division of the base into 180 equal parts, on the principle that to any given interior position lateral sky had precisely the same value as sky directly in front of a window, provided it be visible through the window from that interior position.

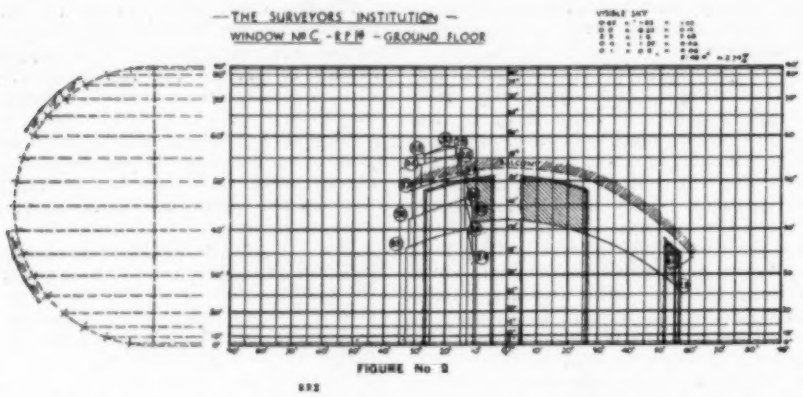


FIGURE No 2

Preparation of Contoured Plans.

Their Council had requested that the process of preparing contoured plans of rooms showing the disposition of good, adequate, and inadequate light under any given conditions of obstruction might be illustrated by taking typical rooms in that Institution. On Figs. 4 to 6 were therefore shown plans of rooms which were doubtless familiar — the North and South Reading Rooms, and the rooms occupied by the Assistant-Secretary (Mr. Evans), and the Building Act Committee, all on the ground floor, and the office of the Librarian (Mr. Wheatley) next to the Library on the first floor. These five examples comprised rooms varying considerably in size and character with a satisfactory varied collection of obstructions, a wide and a narrow street, and an internal light well. It was hoped that members would have compared the lighting conditions in these rooms with the contoured plans of them, and would be prepared to comment upon the efficiency or the reverse of such plans as depicting their impression of the lighting conditions, always remembering that the plans, being those of offices, all related only to light *at table height*, and in moderately dull weather. It was also hoped that, in the discussion which it was the principal object of that paper to evoke, members would record their opinion as to the extent by which the rental or capital value of those rooms, as offices, was reduced by any inadequacy in lighting. Some suggestions as to the principle upon which this very important matter might be considered were given at the end of that paper.

The simple method by which those contoured plans—in fact, all contoured plans—were prepared was as follows:—The first necessity was what was known as a "construction drawing," Fig. 1 showing the room in question and all obstructions which constituted the sky line from material positions inside. It was convenient to fix upon some convenient datum level and to write on the plan the heights of all obstructions. Those figures had been omitted from Fig. 1 for the sake of clearness. On that plan and at right angles to the glass a skeleton section or sections were drawn indicating the interior table height or "plane of reference," the window and the height and distance of salient points duly numbered on plan and sections. In the investigation before them they were dealing with one set of existing obstructions; but obviously, if we desired to consider also raisings or modifications of those obstructions, such alternative conditions could conveniently be indicated on plan and section in inks of as many colours as there were sets of conditions to be considered. Also one construction sheet, as in that case, might comprise several rooms, not necessarily on the same floor, although it usually saved time in the long run to prepare separate construction drawings for each room.

The first operation was to ascertain from what parts, if any, of the room in question no sky at all was visible at table height in order to avoid setting up unnecessary projections. The "no sky" line on plan was extremely useful in many ways, and it would appear to be a simple and speedy matter to set out such a line. Actually it was seldom as easy as it looked, and the average draughtsman attempting the task for the first time with irregular obstructions was often soon reduced to despair. It was however, not difficult if one learned the principles by practice on simple cases.

The next task was to select the necessary number of reference points at which to measure the light in order that a curve or "section" of illumination as on Fig. 3 might be drawn, upon which the two "levels" of good and adequate light might be located to give points on the ultimate

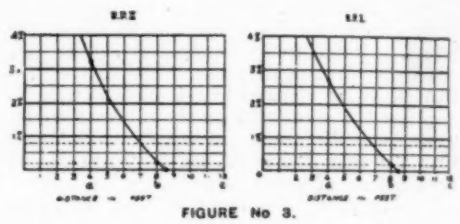


FIGURE No 3.

contour, precisely as a surveyor prepared a contour map of ground levels. The reference points being selected, the draughtsman proceeded to measure and tabulate the angles formed of the altitude and bearing of the necessary points on the edges of the glass and of any of the numbered salient points of obstruction which might be visible through it. These angles were tabulated, often a long and tedious task which could be reduced considerably by organisation. At one time the lecturer used trigonometry and slide rule, but graphic methods were quicker. From

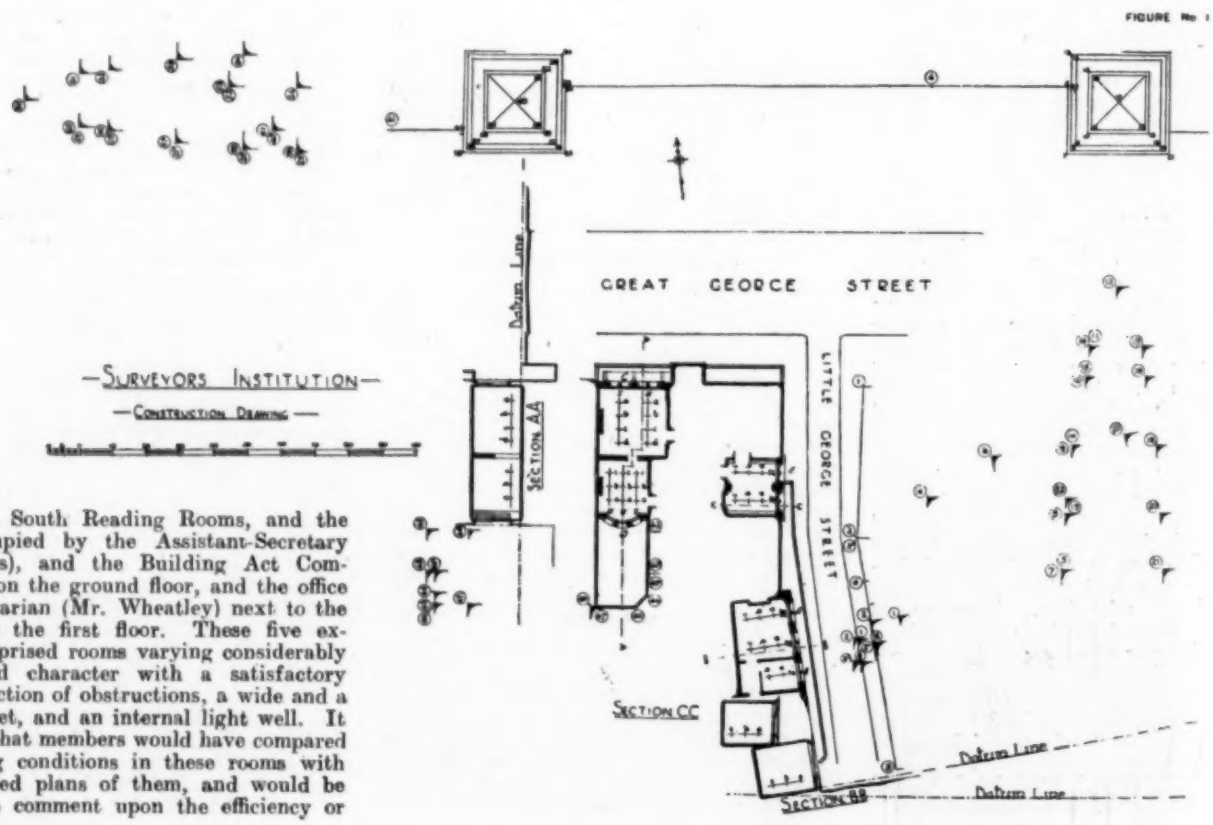


FIGURE No 1

the tabulated angles it was easy to project the windows and whatever could be seen through them on to tracing paper laid over an adjusted diagram as Fig. 2. The sky areas were measured and tabulated and plotted on squared paper as on Fig. 3, and an illumination curve through the points was obtained. It was now necessary to refer to two important matters relating to light received by diffuse reflection both from obstructions outside and from walls and ceilings inside.

Light received by diffuse reflection from within a room had been measured in a large number of cases by the simple expedient of blocking out from any given interior position

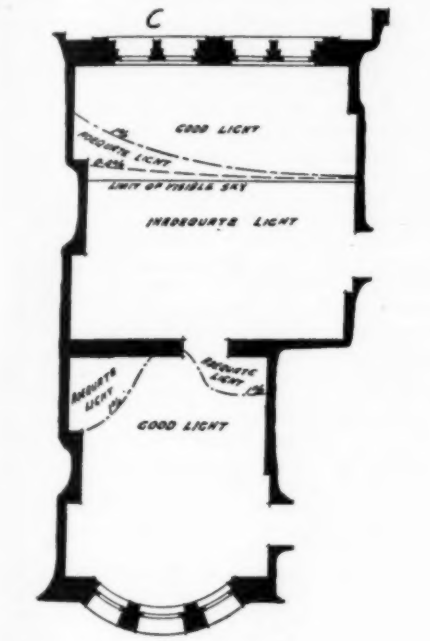


FIGURE No. 4.

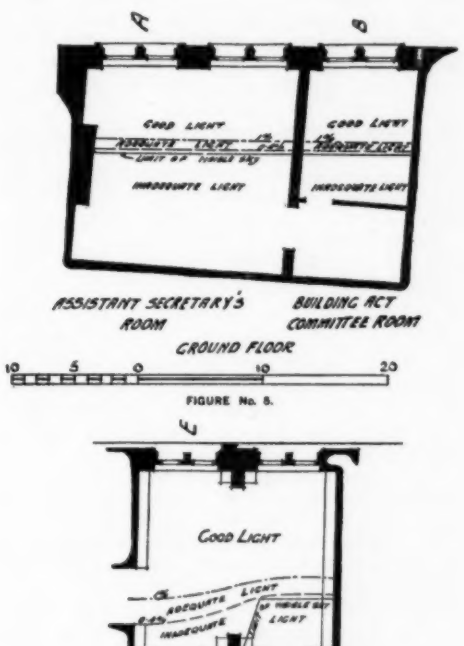


FIGURE No. 5.

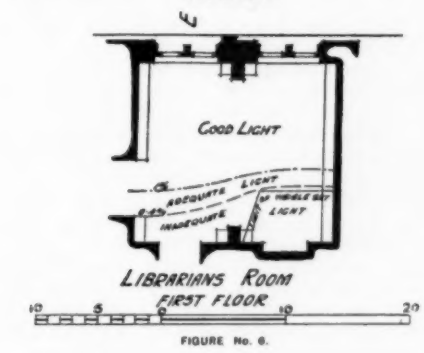


FIGURE No. 6.

only the light from the windows by a small vertical screen or screens, the light left remaining being, of course, the diffused light. It was found that in cases of moderate or severe obstruction this seldom exceeded 0.15 per cent. sill ratio, the probable limits being 0.1 per cent. and 0.2 per cent. It made but little practical difference which of these two limits be assumed, and for some years the lecturer's practice had been to allow 0.2 per cent., viz., marking off the plotted curves on Fig. 3 at 0.8 per cent. instead of 1 per cent., and 0.2 per cent. instead of 0.4 per cent. for the limits of good and adequate light respectively. It had also been conclusively proved that light from whitened or white-faced obstruction, although it might be all that many unfortunate rooms had to depend upon, could only afford adequate light as defined above in the most exceptional circumstances. Also in ancient light disputes where there was no method of enforcing perpetual cleaning, the Courts could give no credit for it.

They had now in Fig. 3 the necessary points for plotting contoured plans as on Figs. 4, 5, and 6. Upon these latter their comments were desired, more particularly with regard to what percentage loss of normal rental value, if any, each room had suffered by reason of insufficiency. In an ancient light case one had, of course, two plans of each room side by side, showing the disposition of good, adequate, and inadequate light under each of the two conditions of obstruction. The writer submitted the following as the correct method of valuing damages in such a case, provided, of course, that damages alone be a sufficient and appropriate remedy. Imagine each room in question, if it be an office or a shop or a workroom, to be one of two rooms side by side, identical in every respect except that of light, both being available for letting but only one being wanted by a reasonable tenant who knows both rooms well. The loss of rental value was surely the reduction in rent which would tempt such a willing and well-informed lessee to take the darker room. Although this test could be applied to most cases, as soon as contoured plans were available, it would not, of course, be suitable for dwelling-houses, which must be compared house by house rather than room by room. Also this test would not be a fair one in cases where the damage was such that a substantial proportion of tenants would not be tempted however low the rent were put.

Sunlight.

As would be seen from Figs. 7 and 8, possible sun was treated by means of a different diagram, which would probably be fairly familiar to members of that Institution.* It should be mentioned that the setting out of those diagrams was in each case from the point (*a*) upon a light "section," viz., 4 ft. from the window glass. In an ancient light case credit should be given for all rays of sunshine which could pass the reveals, and the projection should be set up from a point nearer to the glass.

Reduction of Rental Value due to Inadequate Lighting.

It now became necessary to define various degrees of inadequacy in relation to their powers of discounting normal rental value. To initiate discussion the writer suggested the following tabulation as an approximation for modern office rooms of good proportion if the obstruction be uniform across the aspect. It would not be correct for the effect of irregular or lateral obstruction *averaged* across a room. Damage could be affected considerably by inadequacy on one side of a room extending up to the window wall.

Inadequate light from back wall. Percentage of total depth.	Depreciation of normal rental value as compared with adequate light to back of room. %
0 = Well-lit room	0
25 = Bright room	0 to 2½
33 = Fairly bright room ...	0 ,, 5
50 = Moderately well-lit room	0 ,, 10
66 = Dull room	26 ,, 30
75 = Badly lit room	30 ,, 33

This raised the interesting point whether Mr. Evans's room was darker than the Building Committee room beside it. It might, perhaps, be better if they could base all their standards, as suggested in Technical Paper No. 7, upon some standard modern section, at least for offices.

One word of warning. The popular appreciation of the value of daylight was rising rapidly, and would soon afford all necessary backing to a Ministry of Health desirous of securing at least the minimum of light, air, and sunlight medically essential to those who must work and live where their means dictated. The R.I.B.A. had unhesitatingly announced its aversion to higher buildings. That Institution might perhaps recall† the fact that their *confrères*, the real estate agents of America, found that the new zoning laws of that country, by restricting the ambitions of powerful but grasping landowners, had raised rather than depreciated site values.

Discussion.

In the discussion that followed the reading of the paper, Mr. C. Herbert Bedells said

* "Journal of the Surveyors' Institution" (1923), Vol. II., p. 432.

† "The Surveyors' Institution Transactions," Vol. LV., p. 76. Paper on "Zoning in the Control of Large Cities," by Frank Hunt.

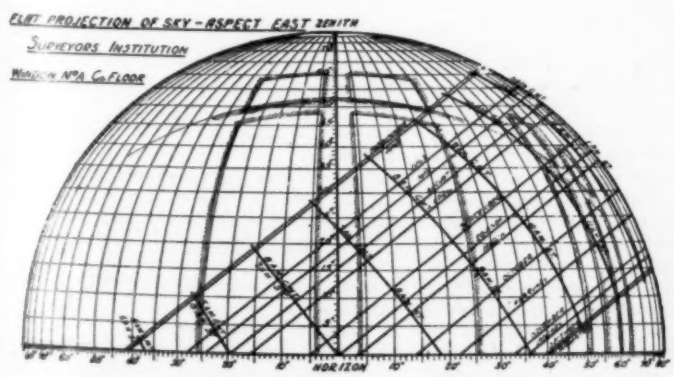


FIGURE No. 7.

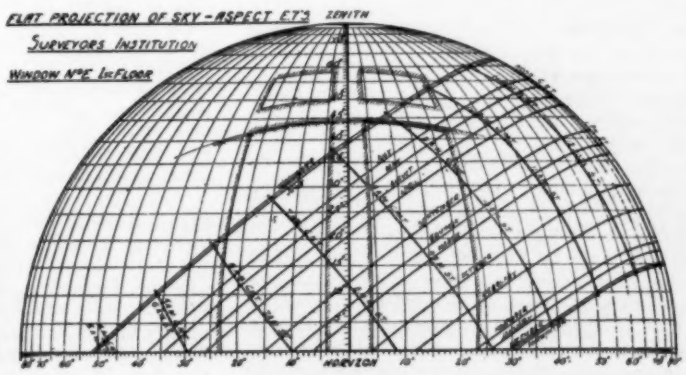


FIGURE No 8

the general objection to methods of ascertainment of obstruction of light such as that advocated by Mr. Waldram was that they were too academic, but he did not wish to associate himself with that attitude. Now that data was available for the surveyors' work it was their duty to avail themselves of it, especially as they had been so much simplified. He was prepared to accept the standard of table height as a useful standard on which all their calculations and documents might be prepared, and he was also prepared to accept the lecturer's criticism of the misleading result of using sill angles. He was surprised at the low value the lecturer attached to diffused light, as the effect of diffused light was sometimes quite remarkable. The data would be valuable for factories and offices, and he would like to know whether there was any data available stating the minimum light desirable for living rooms.

Mr. R. B. Mann said the actual conditions under which people worked in cities must not be forgotten, or exact science ruthlessly applied, or the difficulties put in the way of building operations might amount to a calamity. The claimant of to-day might very well be the defendant of to-morrow. The popular appreciation of the value of daylight was increasing, but he did not see how it could be gratified to any great extent. But it had to be remembered that by modern methods of diffused lighting a splendid substitute for daylight was obtained, and we got quite accustomed to work in artificial light. People who worked in basements and sub-basements which were properly lighted by artificial means appeared to be quite happy, and it was quite impossible for all offices to be adequately lighted without artificial means.

Sir Herbert Cunliffe, M.P., said in the ascertainment of damages in connection with ancient light, the simple problem was: If the light has been in effect damaged, what is the value to the property of the light that has been lost by the action of the infringing owner? That sounded very simple, but it was not so. One point of great interest was: If a man had an ancient light which he was entitled to have protected against infringement, was it sufficient merely to pay him the amount of the damage that would result from the infringement of that light, or was it right to give him any additional damages for loss of light for which by itself he would have no claim? The measure of damages was not necessarily the same as the actual value of the light commercially. Take another problem: A man was undoubtedly entitled to protection for a certain light, and the owner of a building over which the right of light arose was willing to pay a sum in order that he might get the light to carry his building higher; if the value of that light was x, was there anything wrong in the owner of the light saying that the value to the man who wanted to acquire the light was x plus y? Could not he say that the light was his property, and his price was so much? Was not light like any other commodity, and worth not only its value to the owner but worth the amount he could get for it from a customer who particularly wanted it? Sometimes when people held extravagant views as to their ethical rights, the law could provide a remedy, but this is not possible in all cases; everything depended upon circumstances. He had no doubt the method originated by the lecturer would be a great help in arriving at the basis on which damages should be assessed, but it would be necessary for one to be on one's guard against assuming that because the precise amount of diminution of light could be ascertained, the method could be adopted as the determining factor in assessing the value of the light. In some cases it might be a good guide, but he would disagree with any suggestion that it was a universal guide. After all, the real value was the utility of a room or building for business or domestic purposes from the point of view of a purchaser.

"THE BUILDER" DEBATE

III.—SHOULD ARCHITECTS BE CONTRACTORS?

"That Architecture will never resume a healthy state until architects combine the duties of designers and builders."

Presuming that most of those who will interest themselves in this discussion will be architects, the writer realises full well that he is about to put his foot in a hornets' nest; for it has become such an accepted axiom of the professional code that the architect must become defiled with no more brickdust and sawdust than he may collect accidentally during his dignified course of supervision that a suggestion to the contrary is not likely to find popular favour with the profession.

In this, as in so many other things, we have acquired the habit of taking things for granted with very little consideration as to their necessity or desirability; and at a time when the housewives are thinking of spring-cleaning we may usefully consider whether there is not a lot of rubbish in our mental cupboards which might with profit be turned out.

—

Now before we can enter into a full discussion of the subject we must either presume some measure of agreement that architecture is not at present in a healthy state, or else this point must be threshed out as a prelude to the main argument. I imagine there can be very few so satisfied with twentieth-century architecture as to be able honestly to describe it as in a healthy state; but for those few, a few words may be spared.

If called upon to define what is meant by architecture being in a healthy state, the answer might very well be the same as if the question were "What is meant by a child being in a healthy state?" One would say at once that the healthy child must be growing steadily, free in movement, regular in habit, normal in instinct, joyous, full of play, and responding to discipline out of respect rather than in priggishness. Architecture should respond to very much the same tests if it is to be called healthy, and the mind turns instinctively to the Gothic cathedral, the mediæval farmhouse, the Georgian manor, as examples of this state; for whereas definitions tend to lock up ideas in watertight compartments, the living example fits a less rigid outline.

There will be many who profess to see an approach to perfection in the average domestic study of the modern architect. There may be a few who are satisfied with the general standard of the civic architecture of to-day. There can surely be none so bold (or so blind!) as to claim that for every ten modern buildings of all sorts more than two are presentable or more than one meritorious.

It is useless to protest that these buildings of all sorts include many that are not architecture at all, because it is this very mental attitude that exposes the poverty of the modern building genius. There is no essential difference between good and bad architecture and good and bad building, and if issue is to be joined on this point I am afraid we shall not get much farther. To be a fair one, an average must be derived from all that it claims to represent. "But," some may object, "Architecture is far too fine a thing to apply to many of the objects you are referring to." I suggest to the minds of such objectors the loss that architecture would have suffered had the Romans decided that the carriage of water from one part of the country to another was too ordinary a subject for architectural expression.

Typical modern architecture is the average type of building erected in modern times, allowing for the factory, the railway station, the shop, the "desirable villa residence," the asbestos bungalow, and the prolific offspring of "Jerry." We cannot pick and choose among them or segregate the objects of beauty, but we have to take the whole mass together if we are to arrive at our actual standard of health.

Grant me so much, please, and admit that we are in a pretty parlous state. What is wrong with us? Is it that our whole social system is wrong, and that our shocking architecture is but a symptom of a rotten society; or can we supply an answer out of a study of building alone? I think, if we are quite honest with ourselves, we need look little farther than our own trade and profession for the cause.

The modern architect has many parts to play; and so diverse that it is indeed difficult to believe that the man has yet been born who can fill each rôle with credit. He has to be the artist visionary, the family consultant, the sanitary expert, the man of business, the inspector, the lawyer and the judge; and withal he is something of a tradesman, having talents to sell, though at fixed prices like the wartime butcher. In many of these things he is only duplicating the duties of the builder, or performing functions arising out of circumstances created out of his own creation. Both he and the builder have to arrive at the probabilities of cost. Both he and the builder have to consider the soundness of the construction. Both he and the builder have to watch over the workmanship of the craftsman and watch for faults in both. Beyond this there are a number of duties which the architect has to perform which suggest that there is an assumption that the builder is neither honest nor competent in his job. If there is any truth at all in this assumption (and I fear it is sometimes justified), I suggest that its root cause is that generations of minute instruction in constructional methods, and of constant watching for irregularities, have tended to dull the builder's perception of fit method and procedure. Beyond these two classes of duties, all potentially redundant or unnecessary, there remains the architect's chief function, which is to conceive in advance the form and arrangement of the building, and to direct harmony into its execution.

We have arrived at the conclusion, however, that, given an honest and competent builder, he is quite capable of estimating the cost of the works, selecting the materials, directing the workmanship, deciding the construction and presenting a fair account.

What, then, is to be the process of building? Is the architect to produce a set of plans, hand them over to a builder, and then fade away? The idea is against all the principles of artistic creation. The man who has preconceived the building must surely direct its erection in harmony with the ideas he has conceived. And this brings us naturally to the conclusion that if the architect and the builder could become identified in one individuality, a great deal of the complicated processes of building would become dissolved.

Why is it that the speculative builder finds a market so much more readily than can the architect find clients? Surely not purely on the count of cost, or because the average man desires ugliness or is indifferent to beauty. Is it not rather because this plain buying and selling is such a simple and easily understood process, so much less complicated than the intricacies of professional intercourse?

What a chance there is for the architect, with trained vision, and freed from the snobberies of professionalism, to really regain touch with the public, in this way! How else, indeed, can architecture ever again become the true reflection of the life of the people?

The idea may be a shock to the professional mind, because it is so much against the code of practice; but if architects and architecture—yes, and builders and building—are in such a bad way as they appear to be, it will have to be something very shocking to put things right again.

I move, therefore:

"That Architecture will never resume a healthy state until architects combine the duties of designers and builders."

Positive.

THE SURVEYORS' INSTITUTION.

Following is a list of the candidates who have passed the recent Preliminary Examination of the Surveyors' Institution:—

Abrahams, B., Brondesbury.
Ainsworth, H. C. B., Horsham.
Aron, C. W., London.
Ashcroft, E. L., Carshalton.
Babbs, F. W., Epsom.
Badley, R. R., Anfield.
Bagnall, W. T., Angmering.
Barnett, J. J., London.
Barrow, D. W., West Bromwich.
Bate, F. H., Lower Gornal, Staffs.
Battersby, T. E. I., Sparkbrook.
Beckett, G. N., Chester.
Bedwell, H. E., East Dulwich.
Behrens, A. C., London.
Bennett, N., Swinton.
Booth, H., Grays.
Bourne, J. C., Twickenham.
Bower, I. W., Sutton Coldfield.
Bowyer, A. H., Hailsham.
Brightwell, H. A. N., Sparkbrook.
Brown, F. A., East Twickenham.
Bullock, K. L., London.
Burland, J. C., Tunbridge Wells.
Butler, L. J. R., Portishead.
Cannon, H. J., Hemel Hempstead.
Cassidy, M. O. (Miss), Liverpool.
Clark, A. G., Balham.
Clark, L. W., Solihull.
Clarke, J. W., Bournemouth.
Cobbold, H. C., Ilminster.
Cocker, B. A., London.
Collison, J. S., Sevenoaks.
Costain, A. P., Kingswood.
Daniels, F. E., London.
Decker, A. J., S, Woodford
Denford, D. V., Laleham.
Dennison, R. F., Southsea
Dowler, B. N., Liss.
Draycott, A. C., Ferring.
Durrant, L., Richmond.
East, F. J., Bingham.
Edwards, H. W., Letchworth.
Elmslie, S. K., London.
Evans, C. C., Llanelly.
Farington, J. E., Herne Hill.
Fish, F. R., East Ham.
Greeves, R. E., Ampthill.
Gibson, G. E., Crewe.
Gold, J., West Croydon.
Goldsmith, N. F., Handsworth.
Grieves, T., Edgbaston.
Griffin, E. B., St. Austell.
Guffogg, H., Chorley.
Halhead, A., Carnforth.
Harris, J. B. S., Penrith.
Harris, W. T., Bridgend.
Haynes, P. L., Hawkhurst.
Hayward, C. A. H., Cirencester.
Heather, L. H., Bexhill.
Hemingway, J. B., Sandiacre.
Henderson, C., Carlisle.
Higgott, C., Sefton Park.
Hinde, N. F., Meliden.
Hodge, R. A., Wyke Regis.
Holden, G., Bury.
Howe, F. D., Beccles.
Hunter, B., Rawmarsh
Hurt, W., Bournemouth.
Ingham, N., West Hartlepool.
James, R. H., East Grinstead.
Jennings, C. W., Filton.
Johnson, C. E., Knaresborough.
Johnson, R. H., Lytham.
Johnson, W., Roker.
Jolley, R. P., Chelmsford.
Joseph, T., West Hampstead.
Kavanagh, S., Surbiton.
Kemp, K. G., Beckenham
Kenham, H., London.
Kerley, W. H., London.
Lambert, A. E., Yardley.
Lang, J. C., Clapham Junction.
Last, R. J., Cleckheaton.
Leater, F., Middleton.
Lee, S. H., Davenport.
Lucas, R. O. S., London.
Mansfield, L. H., Halifax.
Mason, R. G., Norwich.
Matthews, G. W. A., Bridport.
Millard, J. R., Bournemouth.
Morgan, W. O., Tredegar.
Morton, J., Millom.
Moss, H., Walton.
Moxon, L. C. A., Harbledown.
Murray, R. G., Nottingham.
Naden, F. W., Buxton.
Nicholson, H. L., Shrewsbury.
Nisbet, R. C., Weybridge.
Onions, H. S., Penkridge.
Owens, R. J., Swindon.
Parry, T. E., Colwyn Bay.
Payne, A. C. W., Liss.
Peel, T., Stamford.
Pertwee, J. H., Chelmsford.
Preston, J. B., Lancaster.
Priest, W. E., Wokingham.
Ramsden, N., Oldham.
Ratcliff, J. F., Richmond.
Ratcliff, L. J., Boscombe.
Rathmell, E. E., Headingley.
Reece, P. O., Bebington.
Ripley, R., Boscombe.
Robinson, T. A., Gateshead-on-Tyne.
Rudin, R. W., Ibstock.
Scott, N. P., Portsmouth.
Smith, W. K., Mossley Hill.
Sprague, C. A. J., High Holborn.
Symes, F. T., Harrow.
Symmons, K. D., Harringay.
Tanner, D. J., Hornsey.
Taylor, L. F., Harrow.
Thompson, A. O'B., Maidenhead.
Tisdale, R. R., Weymouth.
Todd, H., London.
Tomlins, J. N., Wolverhampton.
Vernon, A. J., London.
Wall, N. G., Abertillery.
Waters, E. W., Wolverhampton.
Watson, W. R., Shildon.
Willcock, H. W., Swansea.
Willcox, A. R., Dawlish.
Willey, T. R., Riding Mill-on-Tyne.
Williams, A. H., Marple.
Williams, D. T., Carnarvon.
Williams, D. H., Cardiff.
† Wills, A. J., Falmouth.
Wilson, A. S., London.
Wilson, J. B., Middleton.
Wise, C., Salford.
Woodley, A. E. G., Boston.
Wotton, W. J., Plymouth.
Youldon, S. P., Camberley.

† Preliminary Prize.

Special Test.

Castle, R. W., Southfield.
Henbest, R. G., Croydon
Lean, S. W., Norbury.
Meddick, C. P., Cliftonville.
Middleton, J. B., Bardsey.
Robey, J. R. D., Herne Hill.
Smith, S. R. J., Fulham.
Sutcliffe, A., Liverpool.
Tarring, H. F., Bristol.
Tattersall, L., Watton.
Wallis, N. G., Cheddar.

Scottish Candidates.

Preliminary Examination.

Doig, D. M., Glasgow.
Gair, J. A. D., Kelso.
Malcolm, A., Perth.
Munro, J. K., Tain.
Paterson, A. A., Glasgow.
Russell, G. C., Glasgow.

R.I.B.A.

Following are notes from the minutes of the Council meeting held on February 6:—

The Royal Gold Medal.—The Council, by a unanimous vote, resolved to nominate Mr. E. Guy Dawber, A.R.A., as a suitable recipient of the Royal Gold Medal for 1928.

The Essex Society of Architects.—The application of the Essex Society of Architects for admission as an allied society of the R.I.B.A. was approved.

The Society of Portuguese Architects.—A notification was received from the Society of Portuguese Architects that the R.I.B.A. had been elected an honorary member of the Society. A cordial message of thanks was sent to the Society for the honour they had conferred on the R.I.B.A.

Designs for Bridges.—On the recommendation of the Town-Planning and Housing Committee it was decided to write to the Ministry of Transport and suggest that the Minister should notify the responsible authorities that their designs for bridges should be submitted to the Royal Fine Art Commission before his approval of them is sought.

The Royal Sanitary Institute Congress, 1928.—Mr. E. Stanley Hall and Mr. H. D. Searles-Wood were appointed as the R.I.B.A. delegates to attend the 39th Congress and Exhibition of the Royal Sanitary Institute to be held at Plymouth from July 16 to 21, 1928.

The Henry Saxon Snell Prize.—The Council approved the recommendations of a Joint Committee of the Board of Architectural Education and the Architectural Association for the revision of the conditions governing the award of the Henry Saxon Snell Prize. The revised conditions are published in the R.I.B.A. Prizes and Studentships pamphlet just issued.

The R.I.B.A. Examinations Overseas.—The Board of Architectural Education reported the following results:—

(*a*) The Final and Special Examinations, New South Wales.

Final Examination: examined 2, passed 1.

Special Examination: examined 1, passed 0.

(*b*) The Special Examination, Canada.

Examined 1, passed 1.

(*c*) The Special Examination, Melbourne.

Examined 1, passed 1.

(*d*) The Intermediate Examination, South Africa.

Examined 1, passed 0.

Examiners.—The following were appointed R.I.B.A. Examiners for the year ending December 31, 1928:—

Intermediate Examination.

History of Architecture: Mr. H. Chalton Bradshaw, Mr. Arthur Stratton, Professor L. B. Budden, Mr. W. H. Ansell.

Calculations of Simple Structures: Mr. Donald Cameron

Design: Mr. E. B. Maufe, Mr. O. P. Milne, Mr. Louis de Soissons

Constructional Design and the Properties and Uses of Building Materials: Mr. W. S Purchon, Mr. R. A. Duncan.

Final and Special Examinations.

Design: Mr. L. H. Bucknell, Mr. E. B. Maufe, Mr. O. P. Milne.

Construction: Mr. Donald Cameron, Mr. W. E. Vernon Crompton, Professor A. C. Dickie. Mr. P. M. Fraser.

Hygiene: Mr. W. R. Davidge.

Specifications and the Properties and Uses of Building Materials: Mr. A. R. Powys.

Professional Practice: Major Harry Barnes, Mr. A. G. R. Mackenzie.

Town Planning: Mr. W. Harding Thompson.

Thesis Examiners.

Messrs. Arthur Stratton, S. D. Kitson, W. S. Purchon, Alan E. Munby, Dr. Raymond Unwin, Professor L. B. Budden, Mr. Geoffrey Lucas, Lt.-Col. H. P. L. Cart de Lafontaine.

The R.I.B.A. Statutory Examination.

Messrs. W. E. Vernon Crompton, W. R. Davidge, A. A. Fillary, Baxter Grieg, A. H. Kersey, Alan E. Munby, J. E. Mundell, W. G. Perkins, H. D. Searles-Wood, and W. Henry White.

The Examination for the R.I.B.A. Diploma in Town Planning.

Professor Patrick Abercrombie, Professor S. D. Adshead, Messrs. E. G. Allen, Reginald Bruce, Arthur Crow, W. R. Davidge, F. M. Elgood, W. Carby Hall, W. A. Harvey, H. V. Lanchester, T. Alwyn Lloyd, W. Harding Thompson, Professor Beresford Pite, and Dr. Raymond Unwin.

The Thesis in the R.I.B.A. Special Examination.—On the recommendation of the Board it was decided that the thesis be abolished in the case of the Special Examination, and that candidates be required to submit in support of their applications, as evidence of their general architectural knowledge and capabilities, examples of their work, accompanied by a detailed report or reports. The report, or reports, should deal with the reasons for the selection of the site, its treatment, and a description of the building of which the report is the subject.

The London County Council (General Powers) Bill: District Surveyors' Fees.—It was decided to send a letter to the London County Council on the subject of the proposed amendment of the District Surveyors' Fees as embodied in the draft bill of the Council.

Membership.—Twelve candidates were nominated for the Fellowship; eight candidates were nominated for the Associateship; two candidates were nominated for the Hon. Associateship and one for Hon. Corresponding Membership.

CORRESPONDENCE.

(*Continued from page* 410.)

The A.A.S.T.A. Caxton Hall Meeting.

Sir,—As the speaker in question at the above meeting may I be allowed briefly to state my point of view as it seems to have been misunderstood in certain quarters? Rightly or wrongly the R.I.B.A. stands for registration, and rightly or wrongly, the A.A.S.T.A. stands for minimum salaries for architects' assistants. This being so, it appeared to me that the proposed Registration Bill gave both parties a golden opportunity of coming to an agreement. Let the R.I.B.A. agree to minimum salaries, and the A.A.S.T.A. would not oppose registration.

I pointed out at Caxton Hall that the A.A.S.T.A. were, before the Bill was introduced, in a strong position, as it was hardly likely that the Labour Party in the House of Commons could leave it open to their members to support a bill promoted by and for the benefit of an organisation that had rejected the very modest and limited minimum wage proposals of the A.A.S.T.A.

If the A.A.S.T.A. really believe in minimum salaries they must, as events have proved, take up this attitude, and if their demands are not accepted defeat every attempt to get a Registration Bill placed on the Statute Book. If they are not prepared to do this one can only conclude that they have no confidence in their own Minimum Wage proposals as rejected by the R.I.B.A. With such a lack of confidence, as I indicated at the meeting, I should have every sympathy as by agreeing to limit minimum salaries to members of the R.I.B.A. any agreement arrived at would be useless to assistants and a positive danger to those who had the misfortune to be members of the R.I.B.A.

The Speaker.

LEGAL QUESTIONS WE HAVE BEEN ASKED

By W. T. CRESWELL, Barrister-at-Law, L.R.I.B.A., Associate (late Fellow) Surveyors' Institution, etc.

IX—HOW IS THE OWNERSHIP OF FENCES DETERMINED?

Whenever land is sold, leased or mortgaged the fences then existing define the boundaries of that land, and in general the plan which accompanies the contract, conveyance, lease or mortgage clearly shows these fences and their ownership. But in the case of the purchase of small building plots on building estates where no fences as yet exist, the plan accompanying the conveyance, etc., usually indicates which fences are to be erected and maintained by each purchaser.

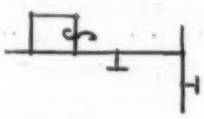
Apart from agreement, prescription, or statute, an owner of land is under no obligation at Common Law to erect and maintain any fence on his boundaries, and in any case no person can bind his successors in title to maintain a fence, for any covenant he makes to do so is a *personal* covenant, and only a breach by *himself* can give a right to obtain damages; the undertaking and liability die out automatically with his ownership and are not passed over as a burden on any subsequent owners of the land.

Dangerous Property Brought on to the Land.

Though an owner is not, as previously stated, obliged in ordinary circumstances to fence his land, yet if he brings dangerous property on to his land he is bound to "keep it in at his peril"; also he must keep his own cattle from straying on to his neighbour's land.

Liability under a Covenant.

The liability under a covenant to erect and maintain a fence is usually indicated by placing the letter "T" against the fence and on the *owner's* side; this means that the fence belongs to T or "This" side. When a smaller plot is taken in with a larger one as one area a brace or long S is put across that boundary thus:—



Ownership of, and Acts of Ownership to, Existing Fences.

It is not an easy matter to determine the ownership of existing fences as between adjoining owners if there is no documentary or other evidence defining it. If they both have exercised acts of ownership each with the knowledge of the other, it is evidence of a "tenancy in common" of the fence; and the boundary line between their lands is then the centre of the hedge or the face of the fence. In exercising acts of ownership, such as repairing a fence or trimming a hedge, there is *prima facie* evidence that the person so exercising them assumes ownership of the fence or hedge. This is especially the case where there is a hedge having a ditch on both sides of it. The ownership of the hedge is determined by acts of ownership on it. But all acts of ownership must have been exercised for a considerable period, and with the knowledge of the adjoining owner and the following usual presumptions as to legal ownership in fences will prevail.

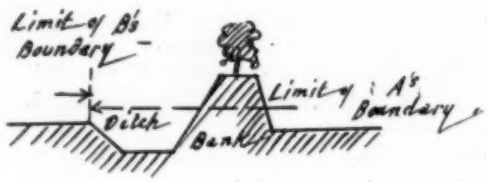
Presumptions as to Ownership.

Acts of ownership determine ownership of a hedge or post-and-rail fence when there is no direct evidence as to ownership, but where the fence is an open pale fence or a close paled fence, and no evidence exists as to its ownership, then there is a rule that the fence belongs to that owner on whose side are the posts and rails to which the paling is fixed, that is to say, he looks on the *back* of it; or, the fence belongs to the owner towards whose land the *nails are driven home*, and the face of it is the boundary of his land. This rule obtains whether the fence is at a side or at the rear of a plot of land, and results in each owner being responsible for the repair of the fence, and this rule, though attempts are often made to set it aside, has (subject to what has already been stated) become firmly established in practice.

The principle of this rule might be, in the opinion of some, a bad one, as it might be said that to nail the palings *away from* the land of the owner of the fence would avoid the necessity of his having to enter on the adjoining owner's land in order to execute repairs. But it must be remembered that it is the palings themselves which mark the extreme boundary of the land, and that therefore the owner should place his posts on his own land. To reverse the rule would mean either throwing into or filching from the adjoining owner a strip of land the whole length of the fence of the width equal to the thickness of the posts and pales. Further, experience has shown that as much (or more) repair is required more particularly to the posts and rails as to the palings; the posts often require spurring—and these are, of course, done on the owner's land. Another reason for the rule is that a clean face is shown to the exterior.

Hedge and Ditch Boundary.

When there is a hedge and ditch boundary and no evidence of ownership exists there is a strong presumption that the ownership is as sketch. And in some districts local custom invariably supports the presumption.



That is to say, that the boundary between the adjoining lands is the edge of the ditch furthest from the fence or hedge. But it is doubtful if this presumption can be applied unless the ditch is artificial; the reason for the presumption is that A makes the ditch operating from his own side and not trespassing on B's land, and that in digging it he would stand at the furthest limit of his land and throw the soil dug out so as to form the bank on to his own land. Because if B digs the ditch he would have had to operate at some distance from the boundary on his own side and throw the soil towards A's land. Probability yields to the claims of A. Apart from probability and argument it is said that A's claim is supported by tradition.

"Ditch Widths."

There is no presumption, however, where there is a hedge and ditch, the owner of the hedge is entitled to a "ditch width" along the whole length of the outside of the hedge unless it can be shown that there was originally a ditch and that the hedge was planted inside the boundary line. But there exists in many districts a local custom allowing, where the one-time existence of a ditch can be vouched for, anything from five to seven links as between adjoining owners; and when abutting on public lands, seven to ten links; though in general, a ditch at the side of the highway is judged to be part of the highway, the highway extending over the whole space between the fences.

WEEK IN PARLIAMENT

Westminster, Wednesday.

A Supplementary Estimate.

Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, presented a Supplementary Estimate of £204,000 for grants towards housing expenses. He said that the increased provision in respect of housing was an additional £454,000 required under the 1923 and 1924 Acts, which was reduced to £204,000 by the saving of a quarter of a million under the 1919 Act. That saving was in no respect a cutting down of the housing programme, but merely an adjustment. The Ministry's original estimate for housing was £9,330,000, which included £2,200,000 for payments to local authorities and other bodies under the 1923-24 Housing Acts. That provision was based on the estimate that 143,000 houses would be completed in the 12 months ended September 30, 1927. Owing principally to the desire of a large number of builders to obtain the full subsidy, 212,000 houses were completed, making the total number of houses built since the Armistice 1,028,584. It was on that account that he had to ask for this additional Vote. No country in the world was rehousing at a greater rate than we were. In the period of which he had spoken, a record period, the rate of building was 4½ times the average for the five years before the war.

The Vote was agreed to.

London Squares.

A further meeting of the Commission on London Squares was held at the House of Lords, Lord Londonderry presiding. Mr. W. Loftus Hare, on behalf of the Foundling Estate Protection Association, submitted a proposal that building on the gardens of Mecklenburgh and Brunswick Squares should be prohibited without the payment of compensation to the owners, because, he argued, there had been precompensation, totalling £139,000.

Capacity of British Brickyards.

Colonel Woodcock asked the Minister of Health whether the capacity of British brickyards was yet equal to the house demand; if so, if he was prepared to make it a condition of future housing subsidies that only British bricks were to be used; and whether he could state the total value of imported bricks for the last year?

Mr. Chamberlain said he had no statistics in regard to the capacity of British brickyards, but he was not aware of any shortage of bricks in this country for house-building. With regard to the second part of the question, Section 10 of the Housing (Financial Provisions) Act, 1924, provided that, in approving proposals for the construction of houses, the Minister of Health should not impose any conditions which would prevent the materials required being purchased in the cheapest market at home or abroad. The Government had, however, urged local authorities to arrange that all contracts for or incidental to works carried out by them should, in the absence of special circumstances, be placed in this country. The value of the total imports into the United Kingdom of bricks, of brick earth or clay registered during 1927 was £705,964.

Insured Bricklayers.

Sir A. Steel-Maitland, the Minister of Labour, informed Mr. Wellock that the number of insured bricklayers classified as belonging to the building trade recorded as unemployed in Great Britain on the dates nearest to February 1, for which figures were available, were as follows:—

January 28, 1924	1,281
January 26, 1925	1,071
January 25, 1926	2,953
January 24, 1927	4,807
January 23, 1928	9,027

The figure for January 23, 1928, excluded persons aged 65 years and over, who were

no longer insured under the unemployment insurance scheme. Separate figures were not available in respect of bricklayers' labourers. These were included in the statistics for labourers to all classes of skilled workers in the industry.

Building Trade Unemployed.

Sir A. Steel-Maitland gave Mr. Wellock the following analysis by occupations of the numbers of insured workers recorded as unemployed in the building industry:—

Occupation.	Jan. 25, 1926.	Jan. 24, 1927.	*Jan. 23, 1928.
Carpenters ...	7,525	10,038	16,889
Bricklayers ...	2,953	4,807	9,027
Masons ...	2,331	2,691	3,129
Slaters ...	537	574	610
Plasterers ...	553	874	4,026
Painters ...	32,012	32,647	32,768
Plumbers ...	2,167	2,894	2,480
Labourers to above ...	34,496	37,116	41,276
All other occupations ...	24,837	24,966	27,196
	107,411	116,607	137,401

*Figures related to persons aged 16 to 64 inclusive.

Non-parlour Houses.

Dr. Salter asked the Minister of Health whether, in view of the reduction of £30 per house in the price of non-parlour houses included in contracts let by local authorities during the three months ended in January, 1928, as compared with the corresponding period last year, he was in a position to state that the latest types of non-parlour houses contracted for by local authorities were in all respects and in every case equal to those contracted for in January, 1927, as regarded quality of construction, floor area, and amenities.

Mr. Chamberlain said that in order to qualify for subsidy under the Housing Acts of 1923 and 1924, houses must comply with the prescribed conditions as to materials and construction. Local authorities were not, generally, required to submit for his approval details of their schemes, but he had no reason to believe that the quality of construction or amenities in the houses provided now were not up to the standard prevailing a year ago. The average floor area of non-parlour houses provided during the three months ended in January, 1928, was 788.7 superficial feet, as compared with 790 superficial feet during the three months ended in January, 1927.

A Slowing-down of Building.

Mr. T. Williams asked the Minister of Health if he was aware of the reduction in the number of houses under construction in February, 1928, as compared with the same date in 1927; and, if so, had any steps been taken to speed up the building of working-class houses?

Mr. Chamberlain said he was aware that fewer houses were under construction on the 1st ultimo as compared with February 1, 1927. The rate of house construction last year was abnormally high, but he had no grounds for supposing that normal progress would not continue to be made in areas where houses were needed.

Mr. Williams asked whether it was not the fact that building had slowed down all over the country as the result of the Government's action last year?

Mr. Chamberlain said it had slowed down, but he would not say that it was the result of the Government's action.

Threatened Lincoln Churches.

The inquiry into the proposed sale of the churches of St. Peter-at-Arches and St. Benedict, two of the oldest churches in Lincoln, to the corporation of the city for £8,000 for the purposes of a traffic improvement was closed on Saturday. The appeal for the preservation of the churches was strongly pressed by several witnesses. The decision of the Commission will be announced in due course.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?—ED.

Attacks by Woodpeckers.

SIR,—I shall be glad to hear if any of your readers have had any experience with regard to the prevention of attacks by woodpeckers. I am anxious to deal with a case in which the spire of a church, covered with oak shingles five years ago, has been attacked by the birds and is now in places quite perforated. Can the oak shingles be treated with any chemical which would prevent such destruction, or is there any other known preservative?

FROTHBLOWER.

Concrete Stair Tread.

SIR,—Can any of your readers tell me of a suitable material for covering the treads of a concrete stair in a hospital? I require something which will be easily cleaned, quiet to walk upon, and able to withstand hard wear.

H. H. T.

Dampness in Bungalow.

[REPLY TO "READER," FEBRUARY 17.]

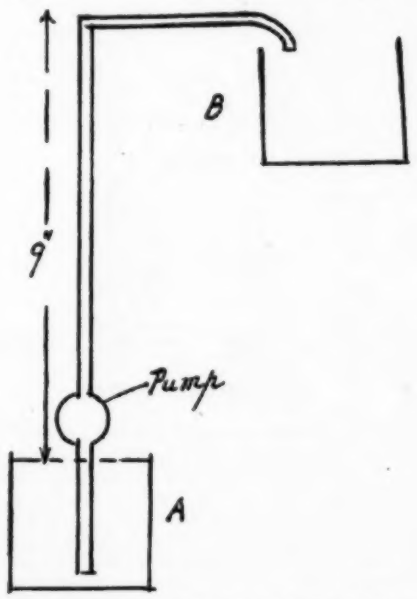
SIR,—The advice given by "Puzzled" in reply to the above query is very sound, and it seems very probable that the characteristic defects in cavity wall construction which he indicates are partially responsible for the trouble.

It appears to me, however, that there is something at fault in the floor construction. Has the whole area of the ground under the floor been covered with concrete, and if so, is this concrete of sufficient thickness, and adequate in its composition, to keep down the dampness that rises from the earth?

L. E. WALKER.

Pump Question.

SIR,—I should be glad of advice on the following problem:—I have to pump water from tank *A* to tank *B*, as shown in sketch. For this purpose I have a Willcox No. 3 semi-rotary suction pump. The only place convenient to fix the pump is directly over



tank *A*. I find I am faced with the following problem: I have to support a column of water 9 ft. high, 1 in. diameter, all the time I am pumping. Is my pump capable of this?

BERNARD C. BEARD.

Damp Walls.

[REPLY TO "CURIOUS," FEBRUARY 24.]

SIR,—The fact that the dampness shows upon the surface of the internal partition wall as well as upon the interior faces of the three external walls rules out the possibility of rain-saturation being entirely responsible. The fact that three of the walls have a weather exposure points to the room being in a "back addition," and it probably has no fireplace. The ventilation would therefore be poor, and as the walls are quickly robbed of their heat by the outer air, it seems very likely that the apparent dampness is due to condensation. If the walls have been plastered with one of the hard patent plasters, this would give added strength to this supposition.

L. E. WALKER.

Wood for Staining.

[REPLY TO "TYRO," FEBRUARY 24.]

SIR,—American pine is excellent for internal joinery that is to be finished with stain, although, owing to its lack of grain, the appearance may be thought uninteresting. Canary whitewood is another suitable timber, and the dark bands of colour which appear in this wood are considered by many to add to its appearance when stained.

LYNN.

SIR,—The best wood in my opinion is American white wood, sometimes known as bass wood.

CLERK OF WORKS.

Lighting of Picture Galleries.

[REPLY TO "PICTURES," FEBRUARY 24.]

SIR,—The chief objection to the suggestion made by your correspondent is that the appearance from below of these pavement lights is likely to be unsightly. It also appears to be an unnecessary provision, since the planning of a picture gallery on the top-side lighting method, as advocated by Mr. Hurst Seager, is quite perfect without any other mechanical aid.

LIGHT.

Stone Walling.

[REPLY TO "RESTORE," FEBRUARY 24.]

SIR,—The question is a little vague and difficult to answer, since conditions vary so widely in different districts, but it would probably be safe to assume that the cost of such walling, with the stone provided free, would come out somewhere about the same as the local price for 11-in. cavity brick walling, labour and materials.

CAVITY.

Working of Oak.

[REPLY TO "ANXIOUS," FEBRUARY 24.]

SIR,—There is nothing wrong with the construction of the door, nor probably with the quality of the oak. What has happened is that the damp in the house, due to wet plaster, etc., has swelled the horizontal boarding, and something has to move, naturally. When the house has dried out, the door should recover perfectly.

PATIENCE.

Country Estate for Development.

Sir,—I want to get into touch with some building society or other concern in regard to the building development of some ground near Dunmow, having plenty of water, being away from main road dust, and well within easy reach of London, with 40-minute trains from Bishop's Stortford. The land is ideal for house development. I should be glad if any of your readers could suggest some agency that would be interested in this matter.

READER.

What is a Bungalow.

Sir,—A client of mine has purchased a piece of land, one of the restrictions on which is that only a bungalow must be built. Is a bungalow a building with rooms on the ground floor only, or will the building still be a bungalow if rooms are put in the roof, so long as the walls do not rise above the ceiling of the ground floor rooms?

SUFFOLK.

THE BUILDING TRADE

EVERYDAY SCIENCE FOR ARCHITECTS AND BUILDERS—IX

By A. M. Giles, B.Sc., A.I.Struct.E., A.M.I.E.E.

Diagrams and Illustrations by M. R. Dumville.

Applications.

Let us now consider in detail some examples of the applications of the principle—fully demonstrated in the previous article, viz., the expansion and contraction of substances, particularly metals, caused by change of temperature. In many modern and up-to-date buildings, we still find it disregarded, and this, in many cases, produces a consequent disfigurement. The fixing of hot-water pipes is a constant source of trouble, and the illustration, Fig. 31, is an instance of what was seen quite recently in a house not a hundred miles from London.

A hot-water pipe was fastened to a wall. The temperature of the water it conveyed, and therefore of the pipe, varied from, say, 32 degrees F. to 212 degrees F., *i.e.*, from the freezing point to the boiling point of water, *i.e.*, through a range of 180 degrees F. Apparently at points A and B it was fixed very firmly, but, on account of the force of

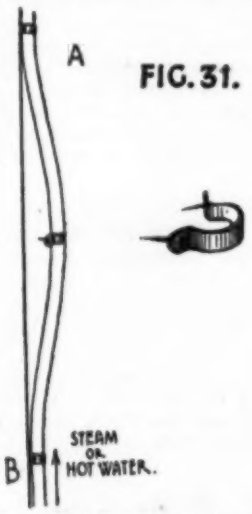


FIG. 31.

expansion, something had to give way, and we find the clip in between points A and B forced out of the wall so as to allow the pipe to take up its expansion by forming the curve between A and B. In order to prevent this sort of thing happening, space must be allowed for the pipe to expand. In the first place it should not be fastened so tightly to the wall that it cannot slip through the clips, and next there must be a small amount of freedom at the extreme ends of the pipe.

Expansion Joint and Expansion Bends.

Now, one effective method of getting over the difficulty is to fit somewhere along the run of piping an expansion joint. (See Fig. 32.)

The illustration helps to make clear its action. It must, of course, be water-tight. This is accomplished by fitting a collar or sleeve round the two ends of the main pipe. By adjusting the nuts and bolts, the ends of the collar are made to press into the rubber rings sufficiently hard to make the joint water-tight. As seen in the diagram there is a space left between the ends of the sections of the main pipe, and this allows it to expand freely.

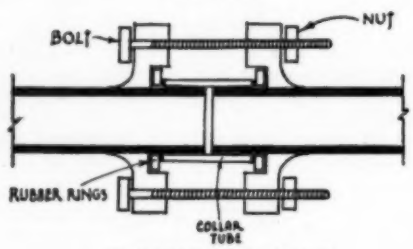
There is another method, more economical than the use of expansion joints, which can be introduced into small installations, *i.e.*, where there are perhaps only short runs of pipes. This consists of arranging somewhere in the length of the piping a bend or curl, known as an "expansion bend." It is illustrated in Fig. 33.

In this case further explanation seems unnecessary, though it may perhaps again be repeated that care should be taken for there to be complete freedom of the pipe where it passes through the clips fastening it to the wall.

Pipes Embedded in Plaster.

Again, in a house built quite recently, an attempt was made to get rid of the disfiguring

FIG. 32.



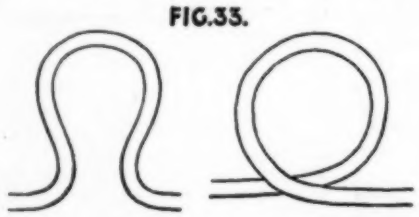
EXPANSION JOINT

appearance of fastening the hot-water pipes to the wall by embedding them in the plaster surface of the wall. Certainly the pipes were very effectively hidden, at least, until they were used for the purpose for which they were intended. Then the expansion of the pipes caused the plaster to bulge out and crack, and in some places to fall away from the pipe. Of course, if someone will invent an elastic plaster, or one that will expand and contract with the pipe, this method of fixing will be ideal. Until that is done a space, into which expansion can take place, must be left around the pipe.

Roof-Trusses, Girders, etc.

It will probably be considered sufficient just to mention that allowance must be made for expansion in the erection of iron bridges, girders, and iron roof-trusses. If one end be fixed, then the other end must be free. This condition is sometimes obtained by allowing the free end to rest or be supported upon rollers. The well-known illustration of this is the Menai tubular suspension bridge. Let it be emphasised here that every temperature change is accompanied by a change in size. This may be repeated probably hundreds of times in the course of a single day. It gives, then, another aspect of the expansion and contraction effect, for it must produce a steady wear upon the affected parts. When the roof of Charing Cross Station fell in some years ago, it was suggested that this repeated expansion and contraction due to numerous temperature changes had a great deal to do with the failure of the iron roof-trusses and girders.

FIG. 33.



EXPANSION BENDS

Expansion of Lead.

This is of particular interest where lead is used on a roof for the lining of a valley or channel, especially if it be fixed on a slope. Lead has a fairly large coefficient of expansion (0.0000292), therefore, wherever it is fixed it must be allowed freedom for expansion in at least two directions. Usually it is fastened at the top and along one side. Now a rise in temperature will cause it to expand, but, owing to its high specific gravity, in its attempt to contract when a fall of temperature takes place, it experiences considerable opposition in returning to its original position against the force of gravity. Hence in time the lead will get thinner towards the upper portion of it, near where it is fastened. This has been referred to as the "creeping of lead."

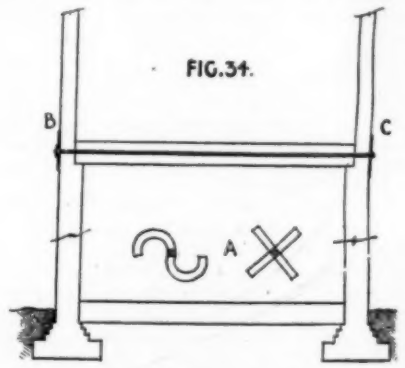
Glazing of Tiles.

The glazed surface of tiles, particularly when they are used near any great source of heat, very often becomes covered with hair-like cracks. Here is a case of unequal expansion, since the glazing has a different coefficient of expansion from that of the body of the tile. Fire-clay manufacturers have still to find a body whose coefficient of expansion shall be the same as that of the glazing.

Kilns and Coppers.

There are some substances that will expand considerably, especially where they are subjected to a great rise of temperature, but will not contract. Brickwork is one of them. It is not unusual, therefore, to find brick-kilns, and even tall chimney shafts, surrounded by iron bands. The iron expands with the brickwork, the latter, of its own accord, will not contract when the temperature falls, but it is made to do so by the contraction of the iron bands. Another example of

FIG. 34.



this is the old-fashioned household coppers that were built into a corner in the scullery. The great heat used for boiling the water caused the brickwork to expand. This, however, did not contract on cooling, and therefore, after being used a few times, it was often noticed that the brickwork had become loose, and had to be relaid.

Hot Rivets.

Though there is a large number of illustrations which would appeal to different people in a different way and to a different degree, it is not possible to mention all. We will, however, conclude by describing two applications of the force of expansion and contraction. The first is the use of hot rivets. It is found that when metal plates are to be joined together so as to make them water-tight, even steam-tight, the use of hot rivets is quite effective. The rivets are beaten in when hot, and upon cooling they draw the plates together with the enormous force of contraction. (Wheelwrights find this a good method of getting the iron tyres tightly fixed on cart wheels.)

The last illustration (Fig. 34) is one where the force of contraction is used to pull together the walls of a building which have for some reason started to bulge. The large S-shaped piece of iron, or the large cross, or even the large iron disc that is often seen upon the side wall of a building is evidence that the wall has been pulled into position again by the contraction of a long iron bar that passes through the building. The explanation is readily understood by reference to Figure 30 at the end of the previous article.

NO PRIVITY OF CONTRACT

In the Mayor's and City of London Court, before Judge Shewell Cooper, on February 9, the Newbury Tile and Kerb Co., 45, De Vere-gardens, Ilford, sued Mr. L. W. Richardson, of 146a, Queen Victoria-street, E.C., builder, for £17 for two iron-arch surrounds (teapot); two iron-arch surrounds (blue); four bedroom surrounds, and two H.P. boilers complete, supplied in September and October last. The delivery of the goods was admitted, and it was held that it was for the defendant to prove his case of part payment.

Mr. Richardson said that his case was that he only owed £3 10s. of the amount sued for. That was for an order which he gave personally to the proprietor of the plaintiff firm. With regard to the other goods, his contention was that he ordered them from Mr. Craig, and that, so far as he (defendant) was concerned, the transaction was with Mr. Craig, and not with the plaintiffs. In August last year Mr. Craig, whom witness had known previously, called and said he was out of work, and he would like to supply witness with some goods. Witness thereupon ordered the goods already named, with the exception of the boilers. He was promised that delivery would be made in three or four weeks, but Mr. Craig did not say by whom. At Mr. Craig's request witness paid him for the goods, and in his (defendant's) view that was an end of the transaction. In cross-examination Mr. Richardson admitted that the goods were delivered on September 23, and that with them came an invoice on plaintiff's notepaper. He said he took no notice of that fact because, so far as he was concerned he paid the person from whom he bought the goods. He produced the cheques which he had given to Mr. Craig, and said at first that he had given them early in September, but an investigation of his cheque counterfoils showed that they were given about September 27, after the goods had been delivered. His contention was that apart from the boilers he had had no transactions with the plaintiffs.

For the plaintiffs, Mr. Wallington, solicitor, submitted that by receiving an invoice from the plaintiffs with the goods the defendant was affected with constructive notice that the plaintiffs were the contracting parties. Evidence was given by the proprietor of the plaintiff firm that they had received the order through their accredited traveller, Mr. Blackstock. He was not a regular traveller, but often got orders for plaintiffs, and in the present case the order was sent by post, with instructions to deliver to the defendant. Plaintiffs knew nothing about Mr. Craig. Unfortunately Mr. Blackstock died in September last.

Mr. Wallington submitted that the defendant's payment to Mr. Craig could not discharge the debt to the plaintiffs. So far as they were concerned they had received an order from their agent, and the goods had been delivered to the purchaser. The defendant had admitted that Mr. Craig had told him, when asking for the order, that he was out of work, and therefore he must have known that somebody else would have been delivering the goods. That, coupled with the fact that he had received an invoice before he made the payment to Mr. Craig, indicated to him that he was buying from the plaintiffs.

Judge Shewell Cooper said the case was a difficult but interesting one. His difficulty was in finding any privity of contract between the plaintiffs and defendant. So far as the goods, other than the boilers, were concerned, it was evident that Mr. Craig must have been in touch with Mr. Blackstock in some way. There could be no doubt that Mr. Craig did pass the order on to Mr. Blackstock, who in turn sent it to the plaintiffs, but the contention that the defendant was affected with constructive notice by receiving the invoice with the goods was untenable, because it had been laid down very forcibly by the Court of Appeal that the doctrine of constructive notice could not be extended to commercial transactions. It was also clear in law that Mr. Blackstock had no business to delegate his authority, and the fact that he chose to accept an order from a third person, and not the purchaser, did not bind the defendant. The defendant was not placed in contractual relations with the plaintiffs by his act. He (his Lordship) had to decide which of two innocent parties was to suffer. The defendant had paid, and in the circumstances it seemed that he had reasonably paid. With regard to the £3 10s., however, that the defendant had admitted, as he had not paid the amount into Court the plaintiffs were entitled to judgment for that sum, with costs on that amount.

Judgment was given accordingly.

SHEFFIELD BUILDING EMPLOYERS

The Sheffield, Rotherham and District Building Trades Employers' Association, held their annual dinner at Sheffield on Thursday, March 1, the new president (Mr. A. Waddington) being in the chair.

The President gave a brief but interesting review of conditions in the building trade during 1927. He said that the past year had been a very happy one, with a complete absence of strife between employers and employed. He had no reason to doubt that a similar satisfactory state of affairs would exist during his year of office. So far as the master builders were concerned they intended to do all they could to ensure a successful year, not only for themselves but for the operatives and for those who were engaged in business with the builders.

Housing had been one of the features of the operations of the building trade for some years, and although the master builders had risen nobly to the occasion, the needs of the country had not yet been met. A great many cities still required houses, and the demand was abnormal. Private enterprise in all parts of the country during the past year had been responsible for the erection of 654,000 houses, of which 349,000 were built entirely without assistance from the Government. This fact was at times lost sight of, and he felt that the conditions of the trade would be very much improved if all subsidies on houses were removed. Most of the problems of the master builder would disappear with a removal of subsidies.

Many of the houses had been built on the competitive system, which he felt sure was the best yet evolved between employer and building contractor.

They welcomed people who entered the trade and pitted themselves against the master builder, but during the last eighteen months they had been faced with a new phase of competition, which he regarded as questionable. He referred to the direct labour department set up by the Sheffield Corporation. The builders did not know what the results of this competition would be, but it was to the detriment of the trade, as no price was stated for the work undertaken by the department, and it seemed very much as if Sheffield ratepayers would be called upon to present a blank cheque for the use of the department. As a ratepayer he most strongly objected to this, but as a builder he would welcome the department in straight, square competition. The competitive system of the country would suffer as a result of the department, and time alone would show to what tune the ratepayers would be called upon to meet the bills.

Direct labour had been tried without success in many parts of the country, and he would be glad to be told of any place where it had proved a complete success. In Gateshead, for example, it had proved a failure.

Mr. Turnbull congratulated Mr. Waddington on his appointment as president of a branch that was doing such fine work. The association had produced one of the finest presidents that they had ever had, and also seven presidents of the Yorkshire region.

These were days of intensive organisation. On the one hand they had a strongly organised body of operatives; the architectural profession was also organised on a national basis; and the manufacturers were organised. It was the duty of the building industry—the largest in the country—to organise the whole of its resources. They sought peace in industry, and if they were to attain it they must be ready for all eventualities. They needed in the industry to-day the energy and enthusiasm of the younger generation, who could take their share in the management of the work. He hoped that something would be done to persuade these young men to take an even more active part in the building trade.

THE USE OF THE PELMET

The modern use of the pelmet is a striking example of the manner in which rationalism induces beauty and attractiveness. Originally in its commercial application nothing but a screen to shield customers' eyes from the glare of the internal illumination of a shop window, the pelmet has increased in beauty of form and execution until it now may form a decorative frame which can be the means of adding great attraction to any shop window.

It is of great use to the architect as a means of bridging the gap between the shop facia and the glazed window front, as may be seen from a study of any important shopping street. Our illustration shows a pleasing design in black, grey and silver. But apart from shop window display, the pelmet is of value to the architect as an internal frame to a window—especially in a restaurant or big store.

There is another side to the pelmet's usefulness which is attracting attention—the medium that it affords for advertising purposes. For some time now the shop-retailer has made advertising use of his various window hangings by embroidering on them his monogram or name in full, but a recent development has been the addition of a decorative announcement of a manufacturer's goods. This subject is of interest to architects, for on them will in future largely fall the onus of preserving the balance between art and commerce. The pelmet as a feature of the domestic interior has, of course, for long been a valuable asset in the hands of the skilful architect and decorator, and its use in this connection is developing rapidly.

The Hardy Memorial.

The committee which has been considering the question of a memorial to Mr. Thomas Hardy has decided that it shall take a three-fold form, namely, an obelisk erected on a Wessex hill, a Hardy library in Dorchester, and the preservation of Mr. Hardy's birthplace at Bockhampton.

A Modern Pelmet.

THE IDEAL HOME EXHIBITION

This exhibition, promoted by the *Daily Mail*, and open at Olympia until March 24, is for several reasons perhaps the most attractive of the whole series, of which it is the twelfth. In comprehensiveness alone it is notable, with its many sections, of which the most important are labour-saving, music, heating, lighting, decoration, sanitation and children's welfare, while in artistic effect it probably surpasses all its predecessors, owing to the unity of design which has been obtained, without, however, depriving exhibitors of a due amount of individuality of expression. In our last issue we illustrated one of the exhibition's most novel features—"The House of the Future," designed by Mr. R. A. Duncan, A.R.I.B.A. (of Messrs. Percy Tubbs, Son and Duncan)—and we now give some brief notes on a few of the more interesting exhibits.

Bratt, Colbran and Co., and The Heaped Fire Co., Ltd., 10, Mortimer-street, London, W.1. **Stand 115**. Ground Floor, Main Hall.—This is an attractive architectural stand with several styles of fires well exhibited. The "Heaped" fire shown in action is an effective and heat-giving fireplace. It is extremely simple in construction, easily lighted and economical and clean in operation. By the use of rustless steel, several examples of which are displayed, the labour of cleaning is reduced to a minimum. Quiet architectural dignity of design and high quality workmanship are noteworthy features of these fires.

Candy and Co., Ltd., Devon House, 60, Berners-street, Oxford-street, W.1. **Stand 84**. Ground Floor, Main Hall.—On this stand Messrs. Candy and Co., Ltd., are again showing a selection of "Devon" fires, which the makers claim embody all the correct principles of construction. The "Devon" fire also in its decorative effect has unlimited possibilities. Messrs. Candy have also on show their decorative pottery, "Wescontree" ware.

Clarkhill's, Ltd., 31, Vauxhall Bridge-road, S.W.1. **Stand 92**. Ground Floor, Main Hall.—Here, of particular interest to builders of small houses and flats, is shown the Clarkhill automatic water heater (gas operated) supplying unlimited hot water to bath, basins and sink. In addition to other models, the new Clarkhill Junior 2½ gallons bath geyser is exhibited for the first time. For those who have only electricity, the Clarkhill electric storage heater is shown. All these models are exhibited under working conditions.

Electrolux, Ltd., 153/5, Regent-street, London, W.1. **Stand 107**. Ground Floor, Main Hall.—Following are brief particulars of the exhibits on this stand:—(1) The Electrolux cleaner yields a high suction efficiency. It is extremely portable and makes the minimum call for physical effort on the part of the user. (2) The Electrolux refrigerator has no mechanical moving part to call for attention and is without noise or vibration. (3) The new Electrolux water softener provides a simple method of softening water for domestic purposes. It can be fitted in a moment to any water-tap. (4) The Electrolux floor polisher, owing to carefully designed brush action, ensures that no brush marks are ever left on the waxed surface of the floor.

Elsan Manufacturing Co., 34/5, High Holborn, London, W.C.1. **Stand 27**. Ground Floor, New Hall.—The Elsan system of sanitation for unsewered areas is here exemplified. The Elsan indoor chemical closet offers all the advantages of town sanitation, yet requires no plumbing, water-flush, drains or elaborate disposal plant. It is recommended for homes, bungalows, farmsteads, sports clubs, caravans, houseboats, etc. Three models are exhibited, which cope with the needs of every class of building. The Elsan system, we understand, has been adopted by Corporations of London, Manchester, Wolverhampton, Plymouth, and rural and district councils everywhere.

Express Boilers, Ltd., 65, Great Portland-street, W.1. **Stand 26**. Gallery, New Hall.—The water heater exhibited on this stand shows how one boiler fitted at sink, and with a small pipe taken to bathroom, can give sufficient hot and boiling water for all household purposes. A steady flow of boiling water after a wait of seventeen seconds is one of the features of this heater, the water being perfectly pure for all drinking and cooking purposes. Express boilers can be had in different finishes to suit individual requirements.

W. N. Froy and Sons, Ltd., Brunswick Works, W.6. **Stand 68**. Ground Floor, Main Hall.—Of especial interest to visitors to Messrs. Froy's attractive stand this year are the new "coloured sanitary fixtures," comprising baths, pedestal lavatory basins, etc., and also two fine examples of complete tiled bathrooms, embodying all the latest ideas and improvements in modern sanitary fixtures. Further interest is added to this exhibit by the display of a collection of modern and period fireplaces, embodying the very latest improvements in construction and design. Further examples are shown at Messrs. Froy's showrooms at Hammersmith.

W. H. Gaze and Sons, Ltd., The Gazeway, Kingston-on-Thames, and 10, Conduit-street, W.1. **Stand 13**. Ground Floor, Main Hall.—This firm shows two "Gazeway" rooms, which represent an attempt to express the atmosphere of earlier times, but without reference to any particular period for inspiration. The wall treatment of the dining-room suggestive of rough plaster is used because of its interesting texture and because it affords opportunities for limitless variations. The windows and fireplace each offer suggestions for a modern treatment. The bedroom follows more closely the lines of accepted period design. The furniture is composed of examples of Gaze's reproduction walnut furniture.

Hammond Bros. and Champness, Ltd., Alfreton-street, Old Kent-road, London, S.E.17. **Stand 94**. Ground Floor, Main Hall. Five full-size working models of lifts are on view at this stand as representative of the firm's products. (1) Hand-power invalid or passenger lift, easy running and fitted with every safety device. (2) H. & C. special disappearing dinner lift, which disappears entirely from the upper floor, no casing being required. (3) Hand-power self-sustaining hotel or restaurant lift. (4) Fully automatic push button service lift with light indicator. (5) Patent disappearing electric service lift for private houses. In addition a mahogany passenger lift cabin with wrought-iron enclosure is shown, and there is an "H. & C." passenger lift in the "House of the Future," which is attracting so much attention.

The Interoven Stove Co., Ltd., 156, Charing Cross-road, London, W.C.2. **Stand 123**. Ground Floor, Main Hall.—This exhibit comprises all models of "Interovens" and "Super-Interovens," including the new "Pascall Combination Grate" for cooking all meals and giving an efficient supply of hot water for all purposes, and a cheerful open fire when cooking is finished. Here are also shown "Bewty" expanding barless fire fronts for modernising old-fashioned fireplaces and saving coal and labour, and "Ten-in-one" adjustable stool bottom grates.

Kelvinator, Ltd., Alexandra House, 29, Kingsway, London, W.C.2. **Stand 108**. Ground Floor, Main Hall.—The Kelvinator automatic electric refrigerators with white porcelain interiors will keep all foodstuffs fresh in a dry, crisp, cold atmosphere, ranging from 40 deg. to 50 deg. F. The average consumption of current is about 1-2 units per day, costing only a few pence each week. There are models to suit every home and prices to suit every pocket.

The Leeds Fireclay Co., Ltd. Head Office: Wortley, Leeds. London Showrooms: 2, Cavendish-place, W.1. **Stand 95**. Ground Floor, Main Hall.—A striking feature of this exhibit is the "Temple" bath of "Imperial porcelain." The exhibit of "Lefco" ware includes Burmantofts' fireplaces, also garden vases, sundials, bird baths, garden fountains, etc. Both "Lefco" fireplaces and garden ornaments are made in a pleasing speckled biscuit colour and retain their distinctive appearance permanently. The fireplaces are characteristically modern, there being no ironwork to clean and no tiles to work loose and fall out. There is an excellent display of sanitary fittings.

The London Gas Exhibit Committee, 84, Horseferry-road, S.W.1. **Stand 82**. Ground Floor, Main Hall.—This stand, whose exhibits demonstrate the essential service rendered by gas and coke in the "ideal home," is of interest to all. The exhibit consists of five model rooms where the uses of gas in the dining-room, sitting-room, bathroom, bedroom and kitchen-scullery are demonstrated in detail. The use of coke for room and water heating is also demonstrated in a practical manner. An effective display of literature dealing with the uses of gas and coke is made.

Richard Melhuish, Ltd., 50 and 51, Fetter-lane, Holborn, London, E.C.4. **Stand 18**. Ground Floor, New Hall.—On this stand there is a complete display of gardening tools, including aluminium wall nails and clips, for the training of creepers, etc. A large display of garden labels is shown, including the patent celluloid label, the stem of which can be bent to any shape for fixing on branches of trees, etc. A novelty will be found in cork mats for fitting into bowls. A specially interesting exhibit is the "Oxford roadless barrow" for winter work in the garden. This is a steel barrow with a "caterpillar" wheel which enables it to be pushed over sodden grass, dug round and other soft surfaces without sinkage and without leaving marks.

National Radiator Co., Ltd., Hull. London Showrooms: 439-441, Oxford-street, W.1. **Stand 9**. Ground Floor, New Hall.—Specimens of the "Ideal Cookanheat," "Ideal Classic" and "Ideal Domestic" boilers and "Ideal Classic" radiators are here shown, as well as the new "Ideal" radiant radiators for building into a wall either flush with its surface or in the form of projecting panels. Visitors are afforded an opportunity of discussing their heating and hot water supply problems at leisure, before or after seeing the possibilities of the various types of apparatus as fitted in the adjacent model houses. Full information concerning the company's hire purchase plan is also available.

Naylor Bros. (London), Ltd., Slough, Bucks. **Stand 72**. Ground Floor, Main Hall.—This firm, which has service depots at Glasgow, Newcastle-on-Tyne, Manchester, Leeds, Derby, Birmingham, Cardiff, Norwich and Plymouth, is showing various paints and stains, amongst others, "Brushing Belco," the Nobel finish for handy home uses, "Fastain," the oil varnish and stain which has been marketed and widely used for over fifteen years, "Necol" plastic wood, Naylor's ready mixed paint and other products.

New Geysers, Ltd., "Barralets' Geysers," 200, City-road, E.C.1. **Stand 93**. Ground Floor, Main Hall.—The "Instor" water heater, which is being shown here for the first time, claims attention by reason of being both an instantaneous and a storage heater, thus offering the conveniences of both methods of domestic water supply. In the first case, from its location in the scullery, it supplies hot water to bath, sink or lavatory one minute after the gas is first lighted. Afterwards it maintains a storage of hot water in readiness for instant use anywhere.

Parker, Winder and Achurch, Ltd., Broad-street, Birmingham. London Office and Showrooms: 4, Gt. Marlboro'-street, W.1. **Stand 81**. Ground Floor, Main Hall.—Here is an exhibit of the "Parwinac" automatic oil-burning heater, an apparatus designed to burn oil wherever coal or coke are now consumed in the existing boiler of any type of heating plant, whether used for domestic or industrial heating. The oil-burning heater, by burning oil instead of coke in the furnaces of central-heating installations, claims to give heating service which is absolutely automatic. There are "Parwinac" models for every purpose—private houses, offices, hotels, etc.

[Our notice of this exhibition will be concluded next week.]

NEW BUILDINGS IN LONDON

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned.

Barnes.—REBUILDING.—The proprietors of the Barnes Theatre in Church-road, S.W., propose to enlarge the theatre by a further 600 seats. Plans have been prepared by Mr. W. J. King, 5, Great James-street, W.C.1.

Becontree.—HOSPITAL.—An announcement is made that a new voluntary hospital is to be formed, of 340-400 beds, with the assistance of the King Edward's Hospital Fund. The Ilford Emergency Hospital will form a nucleus for the proposed new buildings. The architects to the Ilford Hospital are Messrs. Dawson, Son and Allardyce, Clock House Chambers, Barking.

Camden Town. — REBUILDING. — Messrs. Bovis, Ltd., 43, Upper Berkeley-street, W.1, have secured a contract for rebuilding the shops and showrooms of Messrs. Marshall Roberts, Ltd. Plans have been prepared by Mr. M. K. Matthews, 72, Tottenham Court-road, W.1, in conjunction with Messrs. Kitching and Archibald, of Middlesbrough.

Chiswick. — CONVERSION. — Premises in Chiswick High-road, W., have been bought by Messrs. Meakers, Ltd., for conversion into branch showrooms. The plans will be prepared by Mr. A. T. Panton, the company's surveyor.

Commercial-street. — FACTORY. — Messrs. Marcus Estates, Ltd., are to build a factory of four stories. Plans have been prepared by Messrs. Trehearne and Norman, Windsor House, Kingsway, W.C.2. Steelwork will be erected by the Aston Construction Co., Ltd., Eagle Wharf-road, N.1.

Croydon.—HOSPITAL.—The Lord Mayor of London (Sir Charles Batho) announced at the Court of Governors of the Royal Hospitals of Bridewell and Bethlem that the president, Sir Charles Wakefield, had given £25,000 towards the balance of approximately £120,000 to enable the Governors to open the new hospital to be built at Monks Orchard, Shirley, Surrey, free of debt. Two hundred acres of the Monks Orchard estate will be reserved for the hospital, and the new buildings and a nurses' home are shortly to be erected.

Croydon.—DWELLINGS.—The Croydon Town Council recommend that a contract be entered into with Mr. C. J. Doyle, of Liverpool, for the erection of 58 dwellings at a cost of £21,161, and for a further 48 dwellings at a cost of £17,180 10s., on the Mitcham-road housing estate.

Dagenham.—CHURCH.—The London County Council recommend that, subject to the consent of the Minister of Health, a site on the Dagenham section of Becontree, with a frontage to Raydons-road, be sold to the Church of England authorities for the erection of a church.

Dean-street.—RECONSTRUCTION.—Nos. 22-23, Dean-street, W.1, have been acquired by Messrs. Townsend (Builders), Ltd., 24, Dean-street, W.1, who propose to reconstruct the property.

Finsbury-square.—The whole of the old buildings on the south side of Finsbury-square, E.C.2, are being pulled down to make way for a large block of office premises. The builders will be Messrs. Howell J. Williams, Ltd., 11, Bermondsey-street, S.E.1. The architect is Mr. F. R. Gould Wills, F.R.I.B.A., 5, Salters' Hall-court, Cannon-street, E.C.

Grafton-street.—ENLARGEMENT. — Messrs. Helena Rubinstein propose to enlarge their premises at 24, Grafton-street, W.1, to the designs of Mr. A. Benjaman, 98, George-street, Portman-square, W.1. The contractors are Messrs. Trollope and Colls, Ltd., 5, Coleman-street, E.C.2.

Hendon.—HALL.—Plans have been prepared by Messrs. Nicholas and Dixon-Spain, of Hanover-square, W.1, for a large church hall, for the parishioners of St. Alphege's Church, which, when completed, will hold four hundred people. The site is at the north-east end of the church, on a plot of ground adjoining the vicarage garden.

Hornsey.—BATHS.—The Hornsey District Council are considering an open-air swimming baths scheme to cost £12,000.

Leytonstone.—FLATS.—The old buildings at 745, High-street, E., are to be pulled down to make way for a block of shops and flats. The plans have been prepared by Messrs. A. W. Moore and Dartnall, 11, Dowgate-hill, Cannon-street, E.C.

Marylebone.—CONVERSION.—Mr. F. W. Shenton, F.R.I.B.A., has prepared plans for the conversion of the dining-room at St. Marylebone Home, Northumberland-street, W.1, for the Board of Guardians.

Oxford-street.—OFFICES.—The Gas Light and Coke Co., Ltd., Horseferry-road, S.W.1, have acquired an important site at the corner of Oxford-street and Portman-street, W.1, where they propose to build a large block of showrooms and offices.

Princes-street. — RECONSTRUCTION. — Nos. 21-22, Princes-street, W.1, are to be reconstructed as showrooms, etc., to the designs of Messrs. Elgood and Hastie, 10, Henrietta-street, W.1. The builder is Mr. E. H. Burgess, 46, Berners-street, W.1.

Regent's-Park.—IMPROVEMENTS. — Extensive improvements are being carried out to the various buildings in the grounds of the Zoological Society. The architect is Mr. E. Guy Dawber, F.R.I.B.A., 18, Maddox-street, W.1.

Regent-street.—REBUILDING.—The London County Council recommend £27,500 in respect of a building and equipment grant to the governors of Regent-street Polytechnic. Mr. Frederick J. Wills, F.R.I.B.A., is the architect.

Sanderstead.—HOUSES.—Messrs. R. Costain & Sons, builders, are to erect 48 semi-detached houses and garages in Farley-road, Sanderstead.

Southall.—THEATRE.—In connection with the proposed new theatre which is to be erected at Southall, which we mentioned in our last issue, Mr. J. Stanley Beard, F.R.I.B.A., of 101, Baker-street, W.1, is the architect.

Tooting.—SHOPS.—Flats, garages and shops are being erected in Upper Tooting-road, S.W.17, by Messrs. Perry & Perry, contractors, 20, Woodstock-street, W.1. The architect is Mr. H. Douglas Kidd, of 1, Newcourt, Lincoln's Inn, W.C.2.

Tottenham.—ADDITIONS.—Plans have been approved for a large addition to the printing works in Tottenham High-road, N., of Messrs. Crusha and Son, Ltd. The architects are Messrs. H. S. Couchman and Sons, 520, High-road, N.17.

Wembley.—CINEMA.—A new cinema to seat 2,000 persons, a dance hall, restaurant, and shops, etc., are to be erected in the High-street by the Wembley Majestic Theatre, Ltd. The plans have been prepared by Messrs. Field and Stewart, 1, Christchurch-avenue, Wembley.

Wembley.—STUDIOS.—A large site, about 7 acres, has been purchased by the Welsh-Pearson-Elder Films, Ltd., 3, London Wall-buildings, E.C.2, for the erection of large film-producing studios. Plans have not yet been prepared.

Westminster. — ALTERATIONS. — Alterations to offices at 36/38, Old Queen-street, S.W.1, are being done by Messrs. Hammond & Barr, Ltd., builders and contractors, 52, Beauchamp-place, S.W.3. The constructional steelwork is by Messrs. Young & Co., 6, Queen Anne's-gate, S.W.1, and the heating system by the Abbey Heating Co., 8, Prince's-street, S.W.1. The architect is Mr. P. C. Boddy, F.R.I.B.A., Westminster, S.W.1.

Westminster Bridge-road. — BANK. — The National Provincial Bank, Ltd., have acquired an important corner site at Nos. 246-248-250, Westminster Bridge-road, S.E.1, where they propose to build new branch offices. Mr. F. C. R. Palmer, F.R.I.B.A., and Mr. W. F. C. Holden, F.R.I.B.A., Bank Surveyors, are the architects.

L.C.C. HOUSING*

UNDER this title the London County Council has issued a well-compiled and illustrated handbook. In it is described in detail the Council's post-war housing schemes. In the preface, Sir Montagu H. Cox, Clerk of the Council, hazards the opinion that it must not be supposed that the housing problem is already solved, despite the fact that in the one financial year ending March 31, 1928, not far short of 10,000 houses and flats will, it is anticipated, have been erected by the agency of the Council alone. This figure is equal to the total output of 20 years preceding the war. In the period since the end of the war the Council has erected 22,600 houses and flats containing 86,000 rooms, in which it is estimated that over 100,000 persons have been provided with accommodation. In addition, schemes are in progress or are projected which will permit of the addition of 30,000 houses and flats capable of accommodating another 135,000 persons. These are certainly striking figures.

Slums, we are told, have not yet been wholly swept away. Nor have houses yet been provided for all who need them. The warning note is given that the housing standards of to-day will not necessarily be those of to-morrow, and there is a frank admission that some areas not at present classed as slums are certain in course of time to come within this category. This is, we think, the proper spirit in which to tackle the great housing question. It is seen again in the admission that "the estates developed by the Council since 1919 are in many respects in advance of those previously developed, though the latter in their day were considered to be ahead of what was done elsewhere." We are not surprised to read that the provision of new accommodation for the poorly-paid worker still remains insufficient. Normal rents have to be charged "if the losses are to be kept within reasonable limits." In a democratic age it is a striking commentary upon the economic structure that the building industry over a long period has managed to take such a heavy toll from its colleagues.

The whole book is a plain record of solid achievement backed up by facts and figures and numerous illustrations. A novice could not fail to appreciate the diagrams of the clearance schemes, showing the areas before clearance and after reconstruction. It remains to be said that this excellent publication is on sale at the modest price of half-a-crown.

Auctioneers' Institute.

At the January preliminary examination of the Auctioneers' and Estate Agents' Institute, Mr. D. C. Orr, 33, Dunluce-avenue, Belfast, an articled pupil with Messrs. McKelvey & McCombe, F.A.I., was first in order of merit, and has been awarded the institute bronze medal. There were 110 passes out of 160 candidates.

The Telford Memorial, Langholm.

The project for the erection of a memorial to Thomas Telford, the noted engineer, has been advanced a stage farther. A meeting was held in the Town Hall, Langholm, at which a design was submitted of the memorial which had been approved by the Council of the Institution of Civil Engineers. The memorial, which it is proposed to erect in Telford's native parish of Westerkirk, about six miles from Langholm, takes the form of a pair of seats mounted on a platform, 13 ft. wide, raised about a foot above the level of the road. It is backed by a central column, 6 ft. high, which is flanked by massive supporting slabs. Near the top of the central column a panel will receive a bronze medallion of Thomas Telford in bas-relief, and a bronze panel underneath will bear an appropriate inscription.

* "Housing." Published by the London County Council. P. S. King & Son, Ltd., 14, Great Smith-street, Westminster, S.W.1. Price 2s. 6d.

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons.	Bricklayers	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alfreton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ainwick	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashford (Kent)	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Ashington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Aylesbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Aylsham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Banbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnstaple	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Basingstoke	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Berwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bexhill	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bradford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/3	1/0	Newbury
Braintree	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bridlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bromsgrove	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bromyard	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bungay	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Buxton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Canterbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Carlisle	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chorley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cirencester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Clacton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Colchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cranbrook	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cromer	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Deal	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Devizes	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dorchester	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dorking	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dovercourt	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Driffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Droitwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
E. Glam. (Mon. Val.)	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ely	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Exeter	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Exmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Fakenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Felixstowe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Glossop	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Goole	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Gosport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harpenden	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hastings	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hatfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hednesford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Hereford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Herne Bay	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hertford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hitchin	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hoddesdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Holt	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hunstanton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Keighley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Kettering	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Kidderminster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
King's Lynn	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2

	Masons.	Bricklayers.	Carpenters Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers.
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leighton Buzzard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Littlehampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London:								
12 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
12-15 m. radius	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lowestoft	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Luton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Macclesfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Malver	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Margate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Market Harb'rough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Matlock	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Melton Constable	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Melton Mowbray	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Merthyr Tydfil	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newark	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-ur-Lyme	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
New Forest	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newport, Mon	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Nuneaton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oakham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Paignton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Peterborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Pontypridd	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Portsmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ramsgate	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Reading	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Redcar	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Redditch	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Reigate	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Retford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ripon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Saffron Walden	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sawbridgeworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Saxmundham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Sevenoaks	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sittingbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stevenage	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stourbridge	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stourport	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stowmarket	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Stratford-on-Avon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stroud	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swaffham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swindon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Tamworth	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Taunton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Thetford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Torquay	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Totnes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Trowbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Uttoxeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wallsend	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warminster	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Welwyn Gar. City	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Weston-sup.-Mare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Weymouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Whitby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Winchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Windsor	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wisbech	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Woodbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worksop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/0½
Worthing	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/2½
Wrexham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wroxham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Wymondham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/2½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½

For rates of wages in the Building Trade in Scotland, see page 436

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations :—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

MARCH 12.

Dover.—Market.—Covered market, 10 small lock-up shops, etc., for T.C. R. E. Knocker, T.C.

Dublin.—Repairs.—To roof of store at rear of 17, Fleet-st., for C.B. City Architect.

Edinburgh.—Extension.—Of siding accommodation for electric power station, at Westbank, Portobello, for T.C. B.E.

Halifax.—Building Works, etc.—For War Department. Commanding Royal Engineer, 13, Wenlock-terr., York.

***Hampton.**—External Painting Works.—To 90 tenements, for the Hampton U.D.C. Sidney H. Chambers, Surveyor, Public Offices, Hampton, Middlesex.

Limerick.—Residence.—At Moher, Ballyagran, Charleville. J. O'Malley, architect, 10, Glentworth-st., Limerick.

London.—Repairs.—To the properties included in housing schemes for 12 months, for the Hammersmith B.C. R. Hampton Clucas, M.I.C.E., B. E. and S., Town Hall.

London.—New Public Convenience.—At Eelbrook Common, for Fulham B.C. B. E. and S., Town Hall, Fulham. Dep. £2 2s.

Macclesfield. — Working-class Dwellings. — On Coalpit-lane housing estate, for the B.C. Edward Hamson, A., Town Hall. Dep. £2.

Northchurch.—Houses.—8 houses, for Berkhamsted R.D.C. J. Oakes, S. Dep. £2 2s.

Plymouth.—Repairs.—To premises at 2, Prospect-place, for C.B. R. J. Fittall, T.C.

Rochdale.—Installations.—Of electric lighting and power to 20 houses on Victoria-place site, for C.B. B.S.

Rugby.—Cottages.—12, at Harborough Magna, and 12 at Brandon, for R.D.C. J. E. Weeks, surveyor and architect. Dep. £2 2s.

Saffron Walden.—Cottage.—At south-west entrance to grounds, for Committee of General Hospital. W. A. Pite, Son, & Fairweather, architects, 12, Carteret-st., S.W.1. Dep. £2 2s.

Semington.—Rebuilding.—Laundry block at Institution, for Trowbridge and Melksham B.G. W. W. Snailum, architect, Church-st.

Shrewsbury.—Houses.—28 non-parlour-type, in new road at Judith's Butts, for T.C. A. W. Ward, B.S. Dep. £2 2s.

Sudbury.—Alterations.—Also additions to casual wards at Walnut-tree House, for B.G. F. P. Earee, M.S.A., L.R.I.B.A., 36, Market-hill. Dep. £2 2s.

MARCH 13.

Aldershot.—Repairs, etc.—For War Dept. Director of Army Contracts, Caxton House (West), Tothill-st., S.W.1.

Bentley-with-Arksey.—Conveniences.—Also alterations, at Arksey Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Bognor.—Electric Light.—Alterations and additions to the electric light installation at Pavilion, for U.D.C. S.

Clitheroe.—Additions.—Alterations and additions to Sawley Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Conisborough.—School.—Caretaker's house at new Middle School, for West Riding E.C. Education Department, County Hall, Wakefield.

Gosforth.—Houses.—6 two-roomed, on Coxlodge housing estate, for U.D.C. Geo. Nelson, E. and S.

Gosforth.—Shops.—Two one-story shops on Coxlodge housing estate, for U.D.C. G. Nelson, E. and S.

Liverpool.—Demolition.—Of remainder of warehouse 28, Moor-st., for T.C. Land Steward and Surveyor.

London.—Bath.—New swimming bath at Laurie Grove, New Cross, S.E.14, for Deptford B.C. B.S. Dep. £2 2s.

London.—Improvements.—Masons' and paviors' works, for City Corporation. City Engineer, Portland House, Basinghall-st., E.C.2. Dep. £2 2s.

Maltby.—Extension.—Extension of low-pressure hot-water installation, and installation of electric lighting, at Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Markham.—Institute.—For the Markham Village and District Welfare Association. A. F. Webb, L.R.I.B.A., & Son, architects, Tredegar-chambers, Blackwood, Mon. Dep. 3 3s.

Norton.—School.—New school for 240 children, for West Riding E.C. Education Department, County Hall, Wakefield.

Rashenny.—Enlargement.—Of National School, Co. Donegal, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works. Dep. £1.

Shrewsbury.—Works and Repairs.—For Shrewsbury District, for War Dept. R.E. Office, Belle Vue-rd., Shrewsbury.

***Watford.**—Covered Entrance, etc.—To Institution in Vicarage-rd. Guardians' Architects, A. Saxon Snell & Phillips, FF.R.I.B.A., 9, Bentinck-st., Manchester-sq., W.1. Dep. £3.

***Watford.**—Extensions.—To the infirm wards and new observation wards, at the Institution in Vicarage-rd., Watford, Guardians' Architects, A. Saxon Snell & Phillips, FF.R.I.B.A., 9, Bentinck-st., Manchester-sq., W.1. Dep. £5.

MARCH 14.

Bonnyrigg.—Houses.—2 blocks of 4 houses at Polton-st., for T.C. T. Aikman Swan, A.R.I.B.A., 7, St. Colme-st., Edinburgh.

Burntisland. — Additions. — To Higher Grade School, for Fife Education Authority. G. Sandilands, architect and master of works, Education Offices, Kirkcaldy.

Caernarvon.—House.—New minister's house at Brynsiencyn, Anglesey, and new bungalow at Foryd, Llanwnda. Watkin W. Jones, architect and surveyor, Bryn Afon, Caernarvon.

Edinburgh.—Transformer House.—South Rose-st.-lane, for T.C. E. J. MacRae, A.R.I.B.A., City Architect.

Glasgow.—Painting.—At Tidal Weir on river Clyde at Glasgow Green, for Corporation. D. Stenhouse, T.C.

Kirkcaldy.—Additions.—To Buckham Primary school, for Fife Education Authority. Education Offices. Dep. £1 1s.

Kirkcaldy.—Lighting.—Electric lighting in proposed additions at Aberhill school, for Fife Education Authority. G. Sandilands, architect and master of works, Education Offices. Dep. £1 1s.

London.—New Maple Floor.—To ward at St. Andrew's hospital, Bromley-by-Bow, for B.G. Harley Heckford, M.Inst.C.E., A., Council Offices, High-st., Poplar. Dep. £1 1s.

London.—Building Works.—Extension and completion of electricity sub-station for Metro. B.C. of Hackney. B. Elec. E., 18-24, Lower Clapton-rd., E.5. Dep. £2 2s.

Richmond (Surrey).—Painting.—Also decorating inside of infirmary block at Grove Road institution, for B.G. C. L. Fenn, C.

West Bromwich.—Heating.—Electric lighting of medical officers', etc., quarters, and hot-water and heating services, medical officers', etc., quarters, at Hallam Hospital, for B.G. Edwards & Shaw, Consulting Engineers, 105, Colmore-row, Birmingham. Dep. £2 2s.

MARCH 15.

Bridge.—Houses.—Four, at Lower Hardes, and eight houses at Littlebourne, for R.D.C. H. K. Blundell, Building Surveyor. Dep. £1 1s.

Cornwall.—Painting.—Cleaning and repainting station buildings, etc., at following places:—Truro, Liskeard, Looe, etc., Gwinear Road, Marazion, etc., Chacewater, Newham, etc., for G.W.R. F. R. E. Davis, Secretary, Paddington Station, London, W.2.

Dewsbury.—Alterations.—23, The Town, Thornhill, 1 privy conversion and 75 to 105, Overthorne-rd., Thornhill, 16 privy conversions, for C.B. Chief Sanitary Inspector.

Farnham.—Cottages.—68, for U.D.C. R. M. Sargent, Building Inspector.

Hounslow.—Alterations and Additions.—To Telephone Exchange at Hounslow, for Commissioners H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Kerry.—Reconstruction.—Of Castleisland Courthouse and Library, for C.C. W. F. Quinlan, secretary, Courthouse, Tralee.

Luton.—Alterations.—To provide temporary isolation wards at infirmary, for B.G. W. H. Guest Hubbard, architect, 35, Manchester-st.

Walsall.—Hospital.—At Goscote-lane, for the C.B. J. Taylor, B.E. and S. Dep. £3 3s.

MARCH 16.

Bristol. — Painting. — Also repairs, etc., at Guardians' Homes for Children, the Crescent, Downend, for B.G. T. S. Lamb, C.

Coventry.—Demolition Work.—Demolition and removal of certain buildings in the City of Coventry. E. H. Ford, A.M.Inst.C.E., City E. and S. Dep. £1 1s. to City Treasurer.

Kent. — Repairs and Materials. — For Dover, Canterbury, Shorncliffe and Lydd, for War Dept. Director of Army Contracts, Caxton House, West, Tothill-st., London, S.W.1.

March.—Shedding.—Also show-yard fittings, for show of Cambs and Isle of Ely Agricultural Society. L. J. Chater, secretary, 23, St. Andrew's-st., Cambridge.

Portslade-by-Sea.—Houses.—36, on site on south side of Shelldale-rd., for U.D.C. D. V. Howard, architect and surveyor. Dep. £2.

Uckfield.—Conversion.—Of Foresters' Hall into a practical instruction centre, for East Sussex C.C. F. A. Verger, L.R.I.B.A., County Architect, 10, North-st., Lewes. Dep. £1 1s.

Watford.—Parlour Houses.—Erection of 24 in Blackwell-drive, for the Corporation. W. W. Newman, B.E., Municipal Offices, 14, High-st. Dep. £2 2s. to Borough Treasurer.

West Melton.—Painting.—11 houses and outbuildings, Rockingham-st., Barnsley, and 14 houses and outbuildings, York-st., West Melton. C. L. McLintock, architect and surveyor, Midland Bank-chambers, Market-hill, Barnsley.

MARCH 17.

***Anerley.**—Certain Works.—To be carried out to the building comprising the boys' schoolrooms, for the managers of the North Surrey District school. The Superintendent.

Blackburn.—Elementary school and works at Roe Lee Park, for C.B. H. M. Webb, B.Sc.(Eng.), London, Assoc.M.Inst.C.E. B. and Water E., Town Hall, Dep. £2.

***Essex.**—Section Headquarters.—Erection of, for the 310th Anti-Aircraft Searchlight Coy. R.E., at Ongar. The Sec., Essex Territorial Army Assn., Market-rd., Chelmsford, Essex. Dep. £2 2s.

Glasgow.—Convenience.—Public convenience in Hamilton-drive, for T.C. D. Stenhouse, T.C.

Ilford.—School Buildings.—At Barkingside, for the B.C. H. Shaw, A. to E.C. Dep. £5 5s.

Little Hulton.—Houses.—92, for U.D.C. J. H. Heyes, C. Dep. £2 2s.

Wellington.—Houses.—64 non-parlour type, on Orleton-lane housing site, for U.D.C. W. Walker, E. and S. Dep. £2 2s.

MARCH 19.

Ashford.—Extensions.—To electricity works, also concrete engine bed, for U.D.C. H. Wilson, Electricity Works.

Beckenham.—School.—For the U.D.C. Clerk. Dep. £5 5s.

***Bury St. Edmunds.**—Repairs and Materials.—For War Dept. Director of Army Contracts, Caxton House West, Tothill-st., S.W.1.

Chelmsford.—Cottages.—Tenders for the erection of 32, at Writtle Village, and 4 at Galleywood Village, for R.D.C. J. Dewhirst, E. and S.

Dover.—Re-building.—New ward and isolation block of 18 beds as part 2 of reconstruction of Isolation Hospital, Noah's Ark-rd., for T.C. B.E. Dep. £2 2s.

Hayes.—Houses.—200, for U.D.C. R. S. Davey, E. and S. Dep. £5 5s.

Knutsford.—Cottages.—Two, at sewage outfall works, Birkin Brook, Mobberley, for U.D.C. Taylor & Wallin, engineers, Newcastle-upon-Tyne. Dep. £3 3s.

London.—Conversion.—Of dining room, also lavatories, St. Marylebone Home, Northumberland-st., W.1, for B.G. F. W. Shenton, F.R.I.B.A., 27, Fitzroy-st., W.1. Dep. £1.

London.—Dwellings. — Two blocks, for the L.C.C., at Islington. Architect to the Council, The County Hall (Room No 3), Westminster, S.E.1. Dep. £2.

Newquay.—Conveniences.—Taking down of existing structures and erection of public conveniences, shelters, tea-room and other works at Towan Promenade, for U.D.C. J. Ennor, architect. Dep. £5.

***St. Marylebone.**—Office Equipment.—Supply and erection of large filing cabinet in Administrative Offices, for the Guardians of St. Marylebone. Edward A. Frith, Clerk, Northumberland-st., W.1.

Shoreham-by-Sea.—Houses.—60 houses, making-up roadways, etc., on land adjoining Dolphin-rd., Kingston-by-Sea, for U.D.C. Surveyor.

MARCH 20.

Leeds.—Fencing.—Unclimbable fencing and gates to Open Space, Gledhow Valley, for T.C. W. T. Lancashire, City E.

Pengam.—Institute.—At Cefn Fforest, Pengam, Mon., for Cefn Fforest Workmen's Institute and Welfare Association. A. F. Webb, L.R.I.B.A., & Son, architects, Tredegar-chambers, Blackwood, Mon. Dep. £3 3s.

MARCH 21.

London.—Lighting, etc.—Building of brickwork settings for four boilers and economiser, and installation of electric lighting, power, and telephones, for M.A.B. T. Cooper, Engineer. Dep. £1.

***London.**—Cleaning and Painting Works.—At Grove Fever Hospital, Tooting, and Brook Ambulance Stn., Shooters-hill, for M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1 in respect of each work.

***London and Surrey.**—Various.—(1) Re-arrangement of kitchen; (2) Laying of jointless floor; (3) provision of new drying rooms at hospitals and casual wards, for M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1 in respect of each work.

***London and Surrey.**—Covered Yard, Boiler House, and Coal Store.—Erection of at Ambulance Station and Mental Hospital, for M.A.B. Office of the Board, Victoria Embankment, E.C.4. Deposit £1 in respect of each work.

Rochdale.—Houses.—390 on Nook estate, for C.B. S. H. Morgan, B.S. Dep. £2 2s.

MARCH 22.

Newton Abbot.—Houses.—90, on Broadlands housing site, for U.D.C. C. D. White, surveyor.

***Penge.**—Concrete Wall.—To enclose the Roystons school site, Penge, for the Edu. Authority. Col. H. W. Longdin, Town Hall, Anerley, S.E.20. Dep. £2 2s.

Reading.—Houses.—34, on sites in Westbourne-terr., Gosbrook-rd., Auckland-rd., and Wykeham-rd., for C.B. Housing Architect. Dep. £2 2s.

***Various Places.**—Building Works and Repairs.—Air Ministry contracts at R.A.F. stations, to operate from April 2, 1928. The Sec., Air Ministry (W.B.4.b.), Adastral House, Kingsway, W.C.2.

MARCH 23.

London.—Building.—Erection of Central Block at the P.O. Research Station, Dollis-hill, N.W., for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

MARCH 24.

***Accrington.**—Painting.—Also decorating inside and outside of Antley Wesleyan Church. J. H. Bolitho, 24, Tremellen-st., Dep. £1 1s.

Bakewell.—Wiring.—Electric lighting, wiring, and accessories about to be installed at Poor Law Institution, for B.G. Alfred Hawes. Dep. £1 1s.

East and West Molesey.—Houses.—60 at Greenlane, East Molesey, and Beauchamp and Grangerds., West Molesey, for U.D.C. G. Condell, C.

MARCH 26.

Cwmbran.—Houses.—10, on Ponywain housing site, for Llantarnam U.D.C. S.

Greenwich.—Repairs and Re-decorative Works.—To housing estate at Charlton, for the Metro. B.C B.E., Town Hall, Greenwich-rd.

***Hendon.**—Fire Station and Cottages.—Contract (1) Fire station and side road in connection therewith; Contract (2) 8 firemen's cottages, for U.D.C. A. O. Knight, Engineer. Dep. £3 3s.

***Holborn.**—Cleaning, Painting, Redecoration and other Works.—At First and Second Class Swimming Baths, Broad-st., for Holborn B.C. J. E. Parr, A.M.Inst.C.E., B.S.

***Wimbledon.**—Swimming Bath.—Construction of as an extension to the existing swimming bath, Latimer-rd., for the Corporation. B. E. and S., Town Hall, Wimbledon. Dep. £2.

MARCH 27.

***Barnsley.**—Employment Exchange.—Erection of at Barnsley, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Newton Abbot.—Houses.—4 at Manaton, for R.D.C. B. H. Palmer, L.R.I.B.A., 11, Union-st.

MARCH 28.

Mickleover.—Hospital.—Admission hospital of 160 beds adjoining the Mental hospital at Mickleover, near Derby, for Derby County Mental Committee. G. H. Widdows, F.R.I.B.A., architect, Derby. Dep. £1 1s.

***North Foreland.**—New Wireless Station.—Erection of at North Foreland, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

MARCH 29.

***Lambeth.**—Underground Convenience.—Construction of in reinforced concrete at Crystal Palace-parade, Upper Norwood, for B.C. Osmond Cattlin, M.Inst.C.E., B.E. and S., Town Hall, Brixton Hill, S.W.2.

***Staines.**—New Post Office and Telephone Exchange.—Erection of at Egham, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., London, S.W.1. Dep. £1 1s.

Tamworth.—Installation.—Of electric light in Girls' High School, including additional buildings, for Staffordshire E.C. Messrs. Moffett, Rosher & Mann, consulting engineers, Union-chambers, Temple-row, Birmingham. Dep. £3 3s.

MARCH 30.

Bristol.—Houses.—58, on Sea Mills housing site, for T.C. L. S. McKenzie, City E. and S. Dep. £1.

Fermoy.—Houses.—16, for Irish Sailors' and Soldiers' Land Trust. Chief Clerk, 30, Lower Fitzwilliam-st., Dublin. Dep. £5 5s.

MARCH 31.

Ashton-in-Makerfield.—Painting.—Also decorating Carmel Welsh Church, Bolton-rd., Ashton, for Committee. R. Parry, secretary, 262, Bolton-rd.

Bathgate.—Works in connection with technical and Roman Catholic Schools, for E.C. T. Aikman Swan, architect, 7, St. Colme-st., Edinburgh. Dep. £1 1s.

Skeirinoe. — Building. — Concrete beacons on Skeirinoe and Guanachan Rocks in The Minch, for Northern Lighthouses Commissioners, D. A. Stevenson, 84, George-st., Edinburgh. Dep. £2 2s.

NO DATE.

Ardleigh.—Cottage.—For Essex C.C. County Land Agent, 69, Duke-st., Chelmsford.

Barnard Castle.—Heating.—New heating apparatus for Wesleyan Church and Sunday School, C. Leigh, Woodmead, Barnard Castle.

Dennyloanhead.—Houses.—20 houses at Dennyloanhead and 20 houses at Bannockburn, for Stirling C.C. D. W. Glass, 67½, Port-st., Stirling.

Douglas (I. of M.).—Alterations.—To offices and premises, Harris Terrace, Douglas, for Douglas Poor Law Guardians. J. E. Teare, 46, Athol-st., Douglas, Isle of Man.

Grantham.—Shelter. — Underground convenience and shelter, St. Peter's-hill, for T.C. P. A. Benn, B.S.

Halifax.—Shops.—New branch shops at King Cross, for Industrial Society, Ltd. Jackson & Fox, architects and surveyors, 1, Harrison-rd.

Salford.—Centre.—Maternity and child welfare centre in Landseer-st., for T.C. T. Harold Hill, A.R.I.B.A., 19, Kingsway, Altrincham. Dep. £2 2s.

Shoreham-by-Sea.—Extension.—Alterations and additions to town hall and public offices, for U.D.C. Denman & Son, architects, Brighton.

Smallbridge.—Heating.—Parish room, for St. John's Parochial Church Council. A. Percival, C.E. School.

Southsea.—Workroom.—Over 1, Palmerston-arcade. S. B. Isted, The Goodwyns, Cosham.

Staincross.—Cleaning.—Cleaning of ceiling and colour washing of walls of Church of St. John the Evangelist, Staincross. Wm. Shaw, Chapel-st.

Walney.—Shops.—2 shops on Walney, for Barrow Co-operative Society, Ltd. Secretary. Dep. £1.

MATERIALS, ETC.

MARCH 12.

Barking Town.—Road materials.—For U.D.C. R. A. Lay, S.

Boston.—Road Materials.—For T.C. D. G. Cockrill, B.E.

Denbighshire.—Road Materials.—For C.C. E. A. For U.D.C. F. E. Jones, S.

Epsom.—Road Materials.—For R.D.C. T. B Ware, S.

Gellygaer.—Limestone, etc.—For U.D.C. F Read, E. and S.

Guildford.—Highway Materials.—For T.C. J. W. Hipwood, B.S.

Halifax.—Works and Material.—For a period of three years, at Depot, Barracks, from April 1. War Dept., Contracts Comm., R.E., 13, Wenlock-terr., York.

Hambledon.—Road materials.—For R.D.C. S. B. Hasell, E. and S.

St. Thomas.—Highway Materials.—For R.D.C. J. S. Madge, S., Brooklands, Heavitree, Exeter.

Tyldesley-with-Shakerley.—Highway Materials.—Evans, C.E.

West Ashford.—Highway Materials.—For R.D.C. T. W. Dickinson, S.

Wrexham.—Builder's Materials.—For T.C. J. England, B.S.

MARCH 13.

Barton-upon-Irwell. — Highway Materials. — For R.D.C. E. L. Leeming, S.

Belper.—Road Materials.—For R.D.C. Robt. C. Cordon, E. and S.

Cranbrook.—Highway materials.—For R.D.C. C.

Edinburgh.—Pipes.—750 yds., of 9-in. solid drawn steel pipes, for Corporation, H. H. Gracie, engineer and manager, 15, Calton-hill.

Haslingden.—Road materials.—For T.C. R. Austin, Sanitary Inspector.

Ilfracombe.—Road Materials.—For U.D.C. F. B. Goodman, E. and S.

Leeds.—Builder's Materials.—For Tramways and Transport Dept. W. Chamberlain, General Manager.

Seghill.—Highway materials.—For U.D.C. W. M. Gibson, S.

St. Helens (Isle of Wight).—Chippings.—For U.D.C. C. Pursey, S.

MARCH 14.

Batley.—Road Materials.—For T.C. B.E.

Belfast.—Bricks, etc.—For C.B. Cemeteries and Parks Department.

Burnley.—Road Materials.—For C.B. B.S. and E.

Chorley.—Road Materials.—For T.C. B.S.

Downpatrick.—Cement, etc.—For County Mental Hospital Committee. Clerk.

Eastbourne.—Road Materials.—For C.B. L. Roseveare, B.E.

East Grinstead.—Road Materials.—For U.D.C. H. Campbell Golding, E. and S.

Heston and Isleworth.—Cement, etc.—For U.D.C J. G. Carey, S.

Kettering.—Road Materials.—For R.D.C. H. J. Parker, S.

Leek.—Road Materials.—For U.D.C. W. E. Beacham, E. and S.

Patrington.—Stone.—For R.D.C. W. Ingleton, S.

Sculcoates.—Road Materials.—For R.D.C. B. Hinchliffe, E. and S.

Turton.—Highway materials.—For U.D.C. V. W. Laithwaite, S.

MARCH 15.

Chailey.—Road Materials.—For R.D.C. R. P. Cheale, District Surveyor.

Glamorgan.—Piping Materials.—For Mid-Glamorgan Water Board. Eiryn W. Davies, Superintendent and Manager, Water Board Offices, Bridgend, Glam.

Pateley Bridge.—Slag, etc.—For R.D.C. Wm. Storey, District Surveyor.

Wardle.—Road Materials.—For U.D.C. T. A. Noble, S.

MARCH 16.

Alnwick.—Road Materials.—For R.D.C. J. T. Robson, Highway Surveyor.

Carlisle.—Road Materials.—For T.C. Percy Dalton, A.R.I.B.A., City E. and S.

Claybole.—Road Materials.—For R.D.C. T. W. Mawer, S.

Great Yarmouth.—Highway Materials.—For C.B. S. P. Thompson, B.E.

Heywood.—Road Materials.—For T.C. J. B. Nuttall, B.S.

Staffordshire.—Road Materials.—For C.C. James Moncur, C.S.

MARCH 17.

Coulsdon and Purley.—Highway Materials.—For U.D.C. G. A. Ballard, S.

Essex.—Road Materials.—For C.C. Wm. H. Morgan, C.S.

Faversham.—Road Materials.—For T.C. S. P. Andrews, B.S.

Port Talbot.—Builder's Materials.—Tor T.C. B.S.

St. Faith's.—Road materials.—For R.D.C. A. Paterson, S., 39, Catton Grove-rd., Norwich.

Worsley. — Road Materials. — For U.D.C. J. Howard, S.

MARCH 19.

Birmingham.—Pipes.—5,000 lin. yds., of 24 in. internal diameter socket and spigot steel pipes, lined centrifugally with concrete.—For T.C. F. W. Macaulay, M.Inst.C.E., Chief Engineer.

Birmingham.—10,000 lin. yds. of 62 in. internal diameter socket and spigot steel pipes lined centrifugally with concrete.—For T.C. F. W. Macaulay, Chief Engineer. Dep. £1 1s.

Ely.—Road Materials.—For R.D.C. E. Spencer, S.

Kidderminster.—Road Materials.—For T.C. J. Hawcroft, B.S.

Milton.—Highway Materials.—For R.D.C. L. A. Randerson, E. and S.

Romney Marsh.—Highway Materials.—For R.D.C. H. J. Smith, S.

MARCH 20.

Faversham.—Granite Tar-macadam.—For R.D.C. J. G. Chittenden, S.

Hunslet.—Highway Materials.—For R.D.C. W. B. Pindar, C.

MARCH 21.

Bridge.—Road Materials.—For R.D.C. B. G. Chittenden, Highway Surveyor.

Dublin.—Builders' Materials.—For Grangegorman Mental Hospital Committee. Chief Clerk.

Elham.—Road Materials.—For R.D.C. A. E. Price, S.

Isle of Thanet.—Road Materials.—For R.D.C. G. L. Butterworth, S.

Stafford.—Highway Materials.—For R.D.C. W. Blackshaw, S.

Wortley.—Road Materials.—For R.D.C. F. Thurlby, E. and S.

MARCH 22.

Chester-le-Street.—Road Materials.—For U.D.C. W. Ridley, S.

MARCH 23.

Eastry.—Highway Materials.—For R.D.C. C.

MARCH 24.

Crook.—Road Materials.—For U.D.C. O.

MARCH 26.

Altrincham.—Road Materials.—For U.D.C. C.

Beckenham.—Bricks.—65,000 red paving bricks, for U.D.C. H. Storr Best, S. Dep. £2.

Dover.—Ragstone.—For R.D.C. C. W. Whitewood, S.

Ilkeston.—Granite, etc.—For Corporation. B.S.

Lanark (Middle Ward).—Road Materials.—For C.C. W. E. Whyte, District Clerk.

Ramsbottom.—Highways Materials.—For U.D.C. A. Plunkett, E. and S.

MARCH 27.

Great Crosby.—Road Materials.— For U.D.C. J. A. Wright, S.

Ryde.—Granite Chippings.—For T.C. T. J. Fawdry, T.C.

MARCH 29.

West Hartlepool.—Road Materials.—For R.D.C. O. Newton-Edwards, S.

ENGINEERING, IRON AND STEEL.

MARCH 12.

Beverley Bridge.—Main.—Diverting existing 36-in., 30-in., 24-in. and 15-in. diameter mains at Beverley Bridge, Kingston Vale, together with laying of a short length of 21-in. diameter main in Portsmouth-rd., for M.W.B. Chief Engineer's Department (Room 201). Dep. £2.

Stoke-on-Trent.—Tanks.—Grit chambers, storm tanks, pumping station and general works at Trent Vale, and for construction of detritus and sedimentation tanks, bacteria beds, humus tanks, formation of roads, and other incidental work, at Strongford, for T.C. W. H. Makepeace, City Sewage Engineer. Dep. £5 5s.

Wallasey.—Repairs.—50 tons of mild steel underbracing for New Brighton promenade pier, for C.B. L. St. G. Wilkinson, B.E.

MARCH 13.

Enfield.—Sewers.—Construction of 1,090 lin. yds. of 9-in cast-iron pipe sewer, 631 lin. yds., of 9-in. stoneware pipe sewer, and 427 lin. yds., of 6-in. cast-iron pipes, together with manholes, hatch boxes, pumping station and other incidental works, being the completion of a drainage scheme at Brimsdown, for U.D.C. H. R. Crabb, S. Dep. £2 2s.

MARCH 15.

London.—Girders.—80 tons of steel girders and other steel and iron work, for G.W.R. F. R. E. Davis, Secy., Paddington Station, London, W.2. Dep. £2 2s.

MARCH 19.

Balrothery.—Water Supply.—Construction of an earthen embankment and storage reservoir at Hynestown, a concrete service reservoir near Balrothery, laying of about 8 miles of 8-in., 7-in. and 6-in. cast-iron mains, together with service mains, hydrants, fountains, etc., in Balbriggan and Skerries, for R.D.C. M. Murphy, 27, Molesworth-st., Dublin. Dep. £10 10s.

MARCH 22.

Perth.—Water Supply.—Construction of intake works and laying of 2¼ miles of 30-in. and 24-in. diameter concrete and steel mains, mostly in deep and wet cutting, for Corporation. Hunter, Duff & Middleton, C.E., 42, Frederick-st., Edinburgh. Dep. £5.

MARCH 24.

Narberth.—Bridge.—Bridge at each of the following 3 places:—(1) Maenclochog Mill, Parish of Maenclochog, (2) Vagwr, on the boundary of the Parishes of Maenclochog and Llandilo, (3) Bethel, Parish of Monachlogddu, for R.D.C. H. Lewis, C.

Rugby.—Sewerage.—South Kilworth: 9 in. sewer pumping station, 4 in. pumping main, disposal works and Access-rd.; North Kilworth: settlement tank and sludge beds; Welford: 7 in. cast-iron sewer and enlargement of percolating filter; Naseby: (1) settlement tank and sludge beds, (2) separating chamber, settlement tank and sludge beds, for U.D.C. G. Bertram Kershaw, Chartered Civil Engineer, 9, Victoria-st., S.W.1. Dep. £5.

MARCH 26.

Basford.—Sewage.—Sewage disposal works, comprising screening and detritus chambers, No. 2 dortmund settling tanks, No. 3 dosing chambers, No. 3 92 ft. diameter bacterial filter beds, humus tank, mud drying beds, together with small pumping station and rising main and appurtenant works, for R.D.C. S. Maylan, E. and S. Dep. £3 3s.

MARCH 27.

Hambledon.—Mains.—Small brick and concrete pump house and the provision and laying of about 5¾ miles of small cast-iron water mains and fittings in the Parishes of St. Martha's and Wonersh, for R.D.C. P. G. Williams, S. Dep. £2 2s.

Moffat.—Sewers.—Construction of a storm overflow sewer, alteration of sewage disposal works, and construction of new effluent drain, for T.C. Gilbert Thomson & Son, Chartered Civil Engineers, 164, Bath-st., Glasgow, C.2. Dep. £2 2s.

MARCH 29.

Montrose.—Reconstruction. — Partial demolition and reconstruction in reinforced concrete of Montrose Bridge over South Esk, together with provision of a temporary bridge, for T.C. B.S. Dep. £5 5s.

ROAD, SEWERAGE, AND WATER WORKS.

MARCH 12.

Beckenham.—Making-up.—Of Shirley-crescent and Adams-rd., Elmers End housing estate, for U.D.C. H. Storr Best, S.

Beckenham. — Making-up. — Of Sheringham-rd., Suffield-rd., Felmingham-rd., Piquet-rd., Arrol-rd., Allen-rd., and Colesburg-rd., for U.D.C. H. Storr Best, S.

Burton Latimer.—Sewer.—In Station-rd., for U.D.C. R. W. C. Kingsley, S. Dep. £1.

Gateshead.—Paving.—Of Salkeld-gardens, and kerbing, channelling and flagging Field House-rd., from Fern Dene-rd., to back street, for C.B. F. H. Patterson, B.E.

Gateshead.—Roads.—Cement path work on various roads and streets, for C.B. F. H. Patterson, B.E.

Maldens and Coombe.—Making-up.—Nelson-rd. and Grayham-cres., New Malden, and Kingscote-rd, for U.D.C. R. H. Jeffes, E. and S. Dep. £2 2s.

Merioneth.—Road Surface Tarring.—For C.C. W. O. Jones, C.S.

Plymouth.—Making-up.—Of (1) Salcombe-rd.; (2) St. George's-av.; (3) Wembury Park-rd.; (4) Salcombe-rd.-lane South; (5) Rowden-st.-lane North, for C.B. J. Wibberley, Borough Engineer, Surveyor, and Architect.

Southampton.—Road.—Reconstructing Radcliffe-rd., Northam, for C.B. B.E. Dep. £1 1s.

MARCH 13.

London.—Sewer.—Execution of such works, for Corporation. City Engineer, Portland House, Basinghall-st., E.C.2. Dep. £2 2s.

MARCH 14.

Battle.—Reconstruction.—Of length of about 1,700 lin. yds. of London-Hastings-rd., A.21 with concrete foundations surfaced with tarred macadam and kerbed, together with the laying of storm water drains, for U.D.C. G. A. Bramley, S. Dep. £5.

Hove.—Paving.—Laying new paving and providing lighting and other works in Davigdor-rd., between Osmond-rd. and Holland-rd., for T.C. B.S.

Watford.—Reconstruction.—Of Colne-ave. and Cross-mead, for T.C. W. W. Newman, B.E. Dep. £2 2s.

MARCH 15.

Rosslare.—Water Supply.—For Wexford Board of Health. Engineer.

MARCH 16.

Belfast.—Levelling.—Excavating and levelling site at North Circular-rd., for Committee of Ekenhead Presbyterian Church. W. Tudor, F.S.I., 79, Royal-ave.

Stapleford.—Extensions.—Laying 825 yds., 9-in. glazed stoneware pipes, together with necessary manholes, etc., in Hicking's-lane, and Laying 369 yds., 9-in. glazed stoneware pipes, togehter with necessary manholes, etc., in Starch-lane, for R.D.C. G. C. Hardy, S., 11, Church-st. Dep. £2 2s.

MARCH 17.

North Riding of Yorkshire.—Surface Dressing.—For C.C. C.S.

MARCH 19.

Billericay.—Sewer.—Provision, laying and jointing of about 573 lin. yds. of 12 in. glazed stoneware pipe sewer, construction of manholes, and other incidental works, in the Parish of South Weald, near Brentwood, for R.D.C. Willcox and Raikes, 63, Temple-row, Birmingham. Dep. £2 2s.

Burgess Hill.—Reconstruction.—Of London-Brighton-rd., Fairplace Hill, Burgess Hill, a length of about 760 yds., for U.D.C. W. E. Hancock, S. Dep. £5.

London.—Paving.—New wood block paving on reinforced concrete foundations in Old Kent-rd. (two sections), Camberwell-rd., Church-st. (two sections), High-st. (three sections), and Hill-st., also tenders for new concrete roadway, Back-lane, Asylum-rd., S.E.15, for Camberwell B.C. W. Bell, B.E. and S.

London.—Making-up.—Of Abbot-av., Devas,rod., and Durrington Park-rd., for Wimbledon B.C. B.E. and S.

Uckfield.—Reconstruction.—Of two sections of London-Eastbourne main road, for U.D.C. Arthur Hollis, S. Dep. £5.

MARCH 20.

Kendal.—Sewage.—Supply of floor tiles for three 100-ft. diameter filters; supply and delivery to site of 5,250 cub. yds. of screened and graded clinker filtering material, etc., for T.C. F. W. Oxberry, B.S.

Prescot.—Road.—New road from Warrington-rd., to James's-lane, for U.D.C. F. A. Gregson, E. and S. Dep. £2 2s.

Southend-on-Sea. — Making-up. — Of Albion-rd., Barnstaple-close, Crescent-rd., Western-rd., section 4, and Shaftesbury-av., section 2, and incidental works, for C.B. R. H. Dyer, B.E. and S. Dep. £1 each.

MARCH 21.

Bushey.—Surfacing.—Of Vale-rd., for U.D.C. E. E. Ryder, E. and S.

MARCH 22.

Newton Abbot.—Roads.—Also sewers in connection with fourth instalment of Broadlands housing scheme, for U.D.C. C. D. White, Town Hall, S. Dep. £2 2s.

NO DATE.

Horbury.—Sewer.—Laying of 36-in. reinforced concrete tube sewer, in Dudfleet-lane, for U.D.C. W. Sugars, E. and S.

Auction Sales, Tenders, etc.

MARCH 13 AND FOLLOWING DAYS.

London.—Joseph Hibbard & Sons. By order of Messrs. William Marshall & Son, Ltd., owing to expiration of lease. Hardwood sale upon the premises, 256 to 260, Old-st., E.C.2. Auctioneers, 15, Newington-green, Islington, N.16.

MARCH 15.

***Walthamstow.**—Veryard & Yates, by order of Exors., at 89, High-st., Walthamstow, stock of a general timber merchant. Auctioneers, 395, Norwood-rd., S.E.27.

MARCH 20 and 21.

***London.**—Joseph Hibbard and Sons will sell upon the premises, 21, Old Kent-rd., S.E.1, by order of Battley, Sons and Holness, who are retiring from business, builders' stock and plant. Auctioneers, 15, Newington-green, N.15.

MARCH 21, 22 and 23.

***London.**—Goddard & Smith, by direction of Mr. A. J. Smith, without reserve, at 47a, Rectory-grove, Clapham, S.W.4, builders' material and stores. Auctioneers, 40, Seymour-place, W.1.

MARCH 22.

***London.**—Joseph Hibbard & Sons will sell without reserve, by order of Owners, at 40, Page-st., Regency-st., Victoria, S.W., stock of timber. Auctioneers, 15, Newington-green, Islington, London, N.16.

APRIL 18.

London.—Knight, Frank & Rutley, at Hanover-sq. Estate Room, "The Belmont Estate." Freehold building land, cottages and residence; land extends to about 280 acres. Auctioneers, 20, Hanover-sq., W.1.

Public Appointments.

MARCH 13.

Hull.—Assistant in Surveyor's Dept.—Required by the Education Committee. Educ. Offices, Guildhall.

MARCH 14.

Scarborough.—Temporary Architectural Assistant required by the T.C. B.E., Town Hall.

MARCH 16.

***Southampton.** — Draughtsman and Assistant Quantity Surveyor.—Required in the County Architect's Dept. by the C.B. A. L. Roberts, C.A., The Castle, Winchester, endorsed Assistant Quantity Surveyor.

***York.**—Resident Clerk of Works required by the Committee of the North Riding of Yorkshire Mental Hospital, Clifton. J. Ivison Russell, Medical Superintendent, marked "Resident Clerk of Works."

MARCH 17.

***London.**—Technical Assistants for temporary engagements in Architect's Dept. L.C.C. Architect. The County Hall, Westminster, S.E.1, addressed foolscap envelope.

MARCH 19.

***Barking.**—Clerk of Works in connection with Upney Farm Housing Scheme, by the Barking T.C. H. Hargreaves, Clerk, Public Offices, Barking.

***Northampton.**—Temporary Assistant required in the Education Surveyor's Department by the E.C. J. L. Holland, sec., Cty. Edn. Offices.

MARCH 20.

***Derby.**—Clerk of Works for large school in course of erection required by Derby E.C. F. C. Smithard, Sec., Becket-st., Derby.

MARCH 22.

***Lambeth.** — Amended Advertisement. — Male Assistant Clerk in the Borough Engineer's Dept. required by the Lambeth B.C. Bruce Penny, Clerk, Town Hall, Brixton-hill. S.W.2.

MARCH 24.

Kendal.—Clerk of Works required by B.C. F. W. Oxbery, B.S.

MAY 24.

London. — Forthcoming Examination. — Male cartographers in the hydrographic dept. of the Admiralty (19-25, with extension in certain cases). The Secretary, Civil Service Commission, Burlington-gardens, London, W.1.

War Grave Headstones.

While in Derbyshire recently, the Prince of Wales paid a visit to the works of the Hopton-Wood Stone Firms, Ltd., for the purpose of viewing the production of headstones for British War Cemeteries in different parts of the world. The Prince displayed much interest in other architectural work which the firm had in hand.

PROPOSED NEW BUILDINGS AND OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; R.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A

Barnet.—U.D.C.'s town-planning proposals were subject of a public inquiry recently held by the M.H.

Bath.—T.C. are considering scheme for erection of destructor works.—Council resolved to recommend amended scheme for strengthening North-parade bridge and that City E. be authorised to obtain tenders for carrying out work, and to apply to M.H. for sanction to borrowing £8,000 in respect. —Council also resolved to approve scheme and City E. to obtain tenders for carrying out erection of new Grosvenor bridge and to apply to M.H. for sanction to borrowing of £2,750 in respect of works.—Surveying Committee proposed to recommend the reconstruction of the Twerton Suspension Bridge.

Beaconsfield.—Plans been passed by U.D.C. for conversion of market place into shops and flats.

Birmingham.—T.C. recommend that upon conveyance of "Sorrento," Moseley, to Corporation, building be allocated to Maternity and Child Welfare Committee for use as Maternity Home, and £6,002 be approved to carry out alterations and additions.

Blackburn.—Corporation approved estimate submitted by Electricity Committee, and amounting to £8,500, for acquisition of sites and erection of sub-stations in centre of town and in Nook and Furthergate districts.

Blaydon.—Plans passed by U.D.C.: Miners' hall, at Rowlands Gill; miners' welfare institute, at Highfield.

Blackpool. — Rev. F. B. Freshwater, of St. Stephen's-on-the-Cliffs, has entered upon a scheme for erection of Actors' Chapel in church, at £600. The Hall Estates Building Co. (Blackpool), Ltd., have acquired a site at Goldsboro'-av., off Halifax-rd., where they propose to erect houses. Plans prepared by F. T. & G. H. Waddington, architects, 52, Abingdon-st.

Bolton.—Corporation are to acquire land in Quebec-st., for erection of 96 houses.—Members of Congregational Church, Chorley Old-rd., are raising funds for Sunday Schools, to cost £9,000.—Board of Management of Infirmary have schemes in hand for extensions to cost £200,000.

Bournemouth.—T.C. decided to acquire three large properties facing pier at bottom of Exeter-rd., at £28,000, in connection with big scheme for enlarging and improving pier approach and rebuilding pier entrance. — Eldridge, Pope & Co., Ltd., brewers, Dorchester, propose to build hotel at junction of Ship House-lane and Castle-lane. Architect, H. E. Hawker, St. Peter's-chambers.

Brampton.—Plans for rectory at Brampton, designed by Mr. Forsyth, been passed by Huntingdon D.C.

Bromley.—T.C. passed plans: 6 houses, Murray-av., H. F. Thoburn; lecture hall, Ravensbourne-rd., G. H. Skinner; mission hall, Brook-lane, A. E. Thomas; 24 garages, Bloomfield-rd., G. H. Carington.

Bradford.—Empsall, Clarkson & Clarke, architects, Permanent-chambers, Pierce Hall-yard, Bradford, are preparing plans for school at Dudley Hill, Bradford, for Rev. M. Daley.

Brentford.—Efforts are being made to raise £2,000 for extensions to Park Baptist Church.

Burnley.—Corporation propose to erect 56 additional houses on Stoops Farm estate.—General Purposes Committee been recommended to approve of immediate erection of Council School at Rosehill.

Bury.—Board of Management of Bury Infirmary proposes to erect a new maternity ward. Plans by A. M. Lillie, L.R.I.B.A., architect, Bamber Bridge. —B.S. been requested to prepare plans for tram shelter and waiting-room at Tottington.—Plans been approved for new electricity sub-station in Wellington Playing Fields.

Carshalton.—M.A.B. approval be given, subject to assent of M.H., to provision of accommodation for visitors to patients at Queen Mary's Hospital for Children, at £1,290.

Cheltenham.—T.C. passed plans.—Bendall and Sons, six semi-detached houses, Pilford-gdns., off Old Bath-rd.; Miss A. Morgan, ten semi-detached houses, Swindon-rd., North.

Chingford.—U.D.C. are to apply to M.H. for confirmation of plans and proposals for erection of 20 non-parlour houses on part of Peas Mead Allotment land.

Coulsdon and Purley.—Surveyor submitted layout plan in connection with suggested erection of 20 houses on land purchased in Farleigh-rd., San-

*See also our List of Contracts, Competitions, etc.

derstead, and Council recommend (a) lay-out plan be approved, and (b) Surveyor be instructed to prepare and submit plans.—Clerk reported completion of purchase of land in Brighton-rd. for office and fire brigade purposes, and also application been made to M.H. for sanction to loan of £4,800 for purchase of land.—M.H. sanctioned £532 for erection of lavatory accommodation at Rotary playing field.—Plans passed:—County of London Electric Supply Co., electrical transformer substation, Approach-rd., Brighton-rd. Coulsdon; J. and G. Morris, 5 houses, Woodcrest-rd., Purley.

Coventry.—T.C. passed plans.—Additions to premises, Highbury-place, Abbott's-lane, for Coventry B.G.; addition to warehouse, Grosvenor-rd., for J. R. Holbrook; 5 lock-up shops and alterations to "Norton House," corner of White-st. and Wheatley-st., for Lowman and Arch; 6 houses and house with shop, Crabmill-lane, for A. J. Godfrey; reconstruction of Opera House, Hales-st., for Bennett Theatres, Ltd.; 12 houses, Stoneleigh-ave., for Hill and Son; Sunday School, Jesmond-rd., for Trustees of the People's Mission.

Cradley.—Trustees of Cradley Primitive Methodist Church are to proceed with Sunday Schools, at from £2,000 to £3,000.

Croydon.—C.B. approved application of S. W. Parker, 717, London-rd., who desires to extend his tenancy of premises in order to carry out certain improvements.—Application is to be made to M.H. for sanction to borrow necessary moneys for purpose of erecting 70 dwellings.—Council are to invite tenders for erection of 90 houses.—Council recommend that an agreement be entered into with Southern Railway Co. to provide for strengthening of Windmill Bridge, at £800, from the Chief Engineer of the Southern Railway for carrying out the work at the sum of £800.—Application is to be made to M.H. for sanction to borrow £38,400 for purpose of erecting 106 dwellings on first section of Mitcham-rd. estate.

Darenth.—M.A.B. received M.H. sanction to £356 in respect of extension of dayroom accommodation of wards 14 and 22 at Darenth Training Colony.

Darwen.—Amended plans for proposed new school on Avondale-rd site been approved by local authority.

Edgware.—A large corner site in Hale-lane has been purchased by Express Dairy Co., Ltd., who propose to build dairy, restaurant and public hall.

Epping.—R.D.C. are to apply to M.H. for sanction to £7,100 for erection of 22 houses.

Erith.—U.D.C. passed plans.—Six houses off Orchard-ave., Belvedere, W. Grubb, for L. Sitch; Research Building, The Works, Belvedere, for Callender's Cable and Construction Co., Ltd.

Finchley.—U.D.C. passed plans.—Five lock-up garages, sheds, etc., 55, Market-place, East Finchley, G. A. Oram; four houses, Claremont-park, Aird and Baldwin; additional lavatory accommodation, Essex House, Ballards-lane, Clark's College, Ltd.; six houses, Hill-top, The Oakwood Tenants, Ltd.

Guildford.—T.C. are to consider scheme for providing new Assize Courts.

Heywood.—At adjourned annual licensing meeting permission was given for rebuilding of two licensed houses in town, the Freemasons' Arms Hotel, and King's Arms Hotel.—Permission was also granted to make alterations in Picturedrome and provide a balcony which will accommodate 230 people.

Hounslow.—Large motor-tyre factory being built.

Ilford.—T.C. passed plans.—J. Aldridge, 30 houses, 1-27, and 2-32, Westminster-gdns.; J. F. Petry, 23 lock-up garages rear of 75/77, Wanstead Park-rd.; G. E. Gray, Ltd., premises Eastern-ave.; Brand and White, 15 houses, 53/71, Woodford-ave., 14/22, Wycombe-rd.; S. A. S. Yeo, proposed public house, 355/357, Green-lane; J. W. Lohden, 14 houses, 2/28, Vicarage-gdns.; Brand and White, 6 houses, 41/51, Woodford-ave.; Brand and White, 8 houses, 2/16, Derwent-gdns.

Knebworth.—It is proposed to rebuild old Station Hotel and to replace it by a much bigger building. Architect, A. Stuart Souter, 8, King William-st., W.C.2.

Keighley.—E.C. propose to acquire site in Brown-lane, Braithwell, for open-air school.

Kingston-on-Thames.—T.C. are to erect 120 non-parlour houses on site at Cambridge-rd., Norbiton.

Leavesden.—M.A.B. received M.H. sanction to proposals for modernisation of Mental Hospital.

Leyland.—Plans been approved for bank premises in Golden Hill-lane for Manchester and County Bank, Ltd. Mills & Murgatroyd, 23, Strutt-st., Manchester, architects.

Littleborough.—Plans been approved for rebuilding "Dyers Arms," Hitchon & Pickup, 46, Manchester-rd., Burnley, architects.

London.—M.A.B. recommend approval be given, subject to consent of M.H., to erection of second verandah to infirmary at White Oak, at £390.

London (Camberwell).—B.C. recommend B.E. and S. be instructed to carry out necessary repairs to 48, 50, 52 and 55, Pitman-st., at £194 3s.—Plans passed:—A. C. Brown and Son, lock-up garages adjoining 135, Canterbury-rd.; W. Stewart, additions at "The Norfolk Arms," 1, Sandison-st., to abut upon Reedham-st.

London (Homerton).—M.A.B. approved of £540, subject to sanction of M.H., for sisters' messroom at Eastern Hospital, and £275 4s., for improvements in electric lighting of wards and certain staff sitting-rooms and electric wiring.

London (Lewisham).—L.C.C. recommend—£17,000 in respect of construction of Hither-green branch of Lewisham branch sewer.

London (New Cross).—M.A.B. recommend approval to installation, at £400, of lavatory basin with hot and cold water supply, waste, etc., in each of 12 rooms of isolation block 12 at South-Eastern Hospital.

London (Poplar).—M.A.B. recommend, subject to sanction of M.H., approval be given to carrying out, at £440, alterations to superintendent's quarters at Poplar Casual Ward.—L.C.C. recommend borrowing by B.C. of £2,048 for housing purposes.—L.C.C. also recommend consent be given to erection by Council on a site in Tunnel-gdns., of an extension of conveniences at northern entrance to Blackwall Tunnel.

London (Spitalfields).—L.C.C. recommend £600 in respect of preparation of working drawings, specifications, bills of quantities and other preliminary expenses incidental to erection of shop premises, stores, dwellings, etc., in Shepherd-st., and Wentworth-st., Holland Estate.

London (Wimbledon).—M.A.B. approved rearranging accommodation at Fountain Mental Hospital, at £144.

Manchester.—Rev. J. Fitzgerald, St. Brigid, Mill-st., Ashton New-rd., Bradford, Manchester, proposing to erect a school at junction of Cross-st. and Queen's-st., Bradford. Plans by W. Ellis, architect, 29, Deansgate.—Artistic Housing Co., Ltd., proposing to erect 22 garages at rear of Whalley-rd. and Sylvan-av., Whalley-range, Manchester. Corporation propose to borrow £324,431 for new schemes, including erection of 350 houses at Blackley.—Kelsey Bros., Chorton-cum-Hardy, are proposing to make extensions to their buildings. Plans by F. E. Taylor, architect, Sandy-lane, Chorlton.—Rev. Marshall, of St. Malachy's, Collyhurst, has just received official intimation that plans for building, which is to combine church and school, been passed by authorities. Mr. Wm. Ellis, of St. Helen's, is architect.—Rev. Bell, 14, Yarborough-st., Manchester, and members of Bradford-rd. Primitive Methodist Church are proposing to make improvements to buildings. Plans by L. Knowles, 22, Bridge-st.—Peter Walker & Sons (Warrington and Burton), Ltd., brewers, Warrington, proposing to make alterations and extensions to Albion Inn public-house, City-rd., and Welcomb-st., Hulme. Plans by Colonel G. Westcott, 13, Bridge-st.—G. Moore, Albany-rd., Chorlton-cum-Hardy, proposing to erect dairy on site on Stamford-rd., Chorlton-cum-Hardy. Plans by J. D. Mould, F.R.I.B.A., Walmersley-rd., Bury.

Newcastle-on-Tyne.—School is proposed in connection with Cathedral Church of St. Mary's, Clayton-st. Stienlet & Maxwell, 14, Saville-rd., architects.

Newport (Mon).—B.E. reported with respect to Queen's Hill cres., and a letter from Agent of Tredegar Estate, forwarding plan showing suggested erection of houses in portion of Queen's Hill-cres. Council resolved that proposal be approved.—Plans passed.—158, Chepstow-rd., warehouse and lock-up shop, T. B. Bevan, per E. Williams; Brynglas-rd., 6 houses, P. Symons, per C. E. Tebbs; Conway-rd., 5 houses, T. Addis, per H. Budgen; Morgan-st. and Riverside, 35 houses, L. and H. Gibson, per F. Scott.

Northampton.—C.B. resolved to recommend Council to erect Dutch barns over pens, at £800, and B.E. be authorised to invite tenders.

Northwood.—Plans for completion of St. Matthew's Church, Hallowell-rd., Northwood, been prepared by W. L. Carr.

Norton.—Tennant Bros., brewers, propose to erect an hotel at Greenhill, at £8,000. C. B. Flockton, F.R.I.B.A., 15, St. James-row, Sheffield, architect.

Osterley.—New R.C. churches are to be built at Hounslow and Osterley.

Padiham.—U.D.C. approved plans for 2 new licensed houses in Abingdon-st. and Whitegate. Hitchon & Pickup, 46, Manchester-rd., Burnley, are architects for Abingdon-st. scheme, and Wm. Heap, Souther-av., Burnley, is architect for Whitegate scheme.

Plymouth.—E.C. approved draft plans for improvement of Cornwall-st. and Somerset-place school premises, and C.B. resolved that plans be now submitted to the B.A. and B. of E.—Council resolved on recommendation of General Sub-Committee that £200 be included in estimates to cover cost of necessary painting and repairs to portions of Plymouth Museum.—Town Clerk, with regard to interview with officers of M.H. in connection with certain points which had arisen on Council's application for sanction to borrow £15,000 for erection of new offices for Borough Treasurer at rear of Guildhall.—Plan and estimate are to be prepared for additional lavatory accommodation for men and women at Devonport Guildhall.—Council resolved that Messrs. Charlins' plans for new store in Kinterbury-st., set back be approved.—Plans passed: Cattedown Wharves, Ltd., office building, Cattedown-rd.; Prowse & Sons, 4 lock-up garages, rear of 1, Hyde Park-place; C. Jope, 6 houses, Beacon Down-av.; G. H. Webber, 4, houses, Glenavon-rd.

Poulton.—U.D.C. passed plans for electrical transformer station in Sheaf-st., and same in Breck-rd., for Blackpool Corporation.

Retford.—T.C. decided to build 20 houses at Hallcroft.

Romsey.—T.C. are proposing to purchase land for erection of houses.

Sheffield.—M.H. held an inquiry into application by Corporation for confirmation of scheme for improvement of Lambert-st., Furnace-hill, and Scotland-st. area.

Whitby.—Sum of £5,500 is being raised to build tower at St. Hilda's Church, West Cliff.

Windhill (Yorks).—Shipley U.D.C. accepted a tender for cottage baths in Pinnel-st., at £2,100.

Worthing.—New Wesleyan Church, to seat about 500 persons, is to be built at Broadwater, to plans of Richardson & Gill, FF.R.I.B.A., 41, Russell-square, W.C.

Yeovil.—J. Paynter, of Yeovil, left £3,000 to his wife to found a fund for building a church on present site of St. Andrew's Mission Church, Preston-grove.

Yiewsley.—Postmaster-General gives notice that he requires a new post office and telephone exchange.

SERVICES OFFERED

(Continued from p. cviii.)

WANTED.—BRICKWORK, any quantity. Housing schemes, alterations, dilapidations, etc. Rod or job. Good references.—T. CAVE, 69, Fortune Gate-road, Harlesden, N.W.10.

BRICKWORK, Plastering, Dilapidations, Alterations, Sanitary Work, Pointing, Slating, best references (strictly confidential), wanted.—E. G., 58, Ash-street, S.E.17.

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BRICKWORK wanted. Old or new. Day or piece—W. B., 159, Lavender-road, S.W.11.

WANTED.—BRICKWORK, old or new. Town or country.—FRYERS, 98, Chapman-road, E. 9.

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BRICKWORK and Slabbing wanted. Job or piece. Any quantity. Labour only.—W. C., 10, Pevensey-road, Tooting, S.W.17.

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Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Hip and valley tiles (per dozen) Machine-made	0 9 0

METALS.

Joists, Girders, &c., to London Station, per Ton—	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
„ „ Stanchions	16 10 0
In Roof Work	19 10 0

Mild Steel Rounds.—To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	12 0 0	⅝ in. to ½ in.	10 15 0
⅜ in.	11 0 0	⅝ in. to 2¾ in.	10 10 0

Wrought-Iron Tubes and Fittings— (Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Iron Mild Steel.	Genuine Staffs. Iron.	Fittings. ½ in. and under.	Fittings. Over ½ in.	Flanges. ½ in. and under.	Flanges. Over ½ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water	63½	46½	37½	40	47½	50
Steam	60	42½	32½	35	42½	45
Galv. gas	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—Half-Round Gutters—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.

O.G. Gutters.

3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

Rain-Water Pipes, &c.

per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. „	2/0½	1/4½	2/1½
3 in. „	2/6	1/9	2/7½
3½ in. „	2/11½	2/0½	3/0½
4 in. „	3/5	2/6½	3/8½

L.C.C. Coated Soil Pipes—London Prices ex Works

	Pipe.	Bends. stock angles.	Branches. stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. „	3 9	2 7½	3 7
3 in. „	4 6	2 10	4 2½
3½ in. „	4 11½	3 7	4 11½
4 in. „	5 5½	4 0½	5 9

L.C.C. Coated Drain Pipes—London-Prices ex Works.

	Pipe, angles, stock angles. s. d.	Bends, stock Branches. s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1	8 0½
4 in. „ „	6 2	5 8	10 0
5 in. „ „	7 2	10 10	17 1
6 in. „ „	8 6	13 2	21 9

Gasken for jointing, 38/6 per cwt.

Iron—	Per ton in London. £ s. d.		£ s. d.
Common bars	13 0 0	to	14 10 0
Staffordshire Crown Bars— Good merchant quality	14 5 0	to	15 15 0
Staffordshire Marked Bars	16 5 0	„	17 5 0
Mild Steel Bars	10 0 0	..	11 0 0
Steel Bars. Ferro-Concrete quality, basis price	10 0 0	..	11 0 0
Hoop iron, basis price	12 0 0	..	13 0 0
„ Galvanised	27 0 0	..	28 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	13 5 0	..	14 5 0
„ „ „ 24 g.	14 5 0	..	15 5 0
„ „ „ 26 g.	16 5 0	..	17 5 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0	..	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18 10 0	..	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0	..	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0	..	19 10 0
Ordinary sizes 6 ft. to 9 ft. to 26 g.	21 10 0	..	22 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	..	26 10 0
Cut Nails, 3 in. to 6 in.	19 0 0		

(Under 3 in. usual trade extras.)

Metal Windows.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
Lead—Sheet, English, 4 lb. and up	28 0 0
Pipe in coils	28 10 0
Soil pipe	31 10 0
Compo Pipe	32 10 0
Oil lead, ex London area, at Mills per ton	18 5 0

Note.—Countrydelivery, 20s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes. 5s. cwt. extra.

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1
Strong sheet „	1 0
Thin „	1 1
Copper nails „	2 3
Copper wire „	2 4

PLUMBERS' BRASS WORK.
Delivered in London.

New River Pattern Screw Down Bib Cocks for Iron.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
29/- 45/- 76/- 153/- 246/- 510/- per doz.

New River Pattern Screw Down Stop Cocks and Unions.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
41/6 62/- 92/- 174/- 300/- 588/- per doz.

River Pattern Screw Down Main Ferrules.

½ in. ¾ in. 1 in.
39/6 60/- 116/6 per doz

Caps and Screws.

1¼ in. 1½ in 2 in. 3 in. 3½ in. 4 in.
7/6 10/- 14/- 23/- 30/- 42/- per doz.

Double Nut Boiler Screws.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
7/6 11/- 17/- 29/- 36/- 63/- per doz.

Brass Sleeves.

1½ in. 2 in. 3 in. 3½ in. 4 in.
10/- 12/- 20/- 24/- 31/- per doz.

New River Pattern Croydon Ball Valves, S.F.

½ in. ¾ in. 1 in. 1¼ in. 1½ in.
35/- 56/- 98/- 162/- 228/- per doz.

Drawn Lead P. & S. Traps with Brass Cleaning Screw.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	33/-	41/	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- „

Tin.—English Ingots, 3/1 per lb. Solder.—Plumber's 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

			s. d.
Raw Linseed Oil,	in pipes per gallon		0 2 11
„ „ „	in barrels .. „		0 3 1
„ „ „	in drums .... „		0 3 3
Boiled „	„ in barrels .. „		0 3 3
„ „ „	in drums .... „		0 3 6
Turpentine	in barrels .... „		0 3 10
„	in drums (10 galls). „		0 4 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)			47 5 0

(*Continued on p.* 436.)

* The information given on this page has been specially compiled for The Builder, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
Genuine White Lead Paint—"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganawyte," "Polacco," "J." Brand, and other best brands (in 14 lb. tins) not less than 5 cwt lots	per ton delivered	66	15	0
Red Lead, Dry (packages extra) ..	per ton	38	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Fillcol	,,	0	15	6
Size. XD quality	fkn.	0	2	6

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	2½d.	32 oz. fourths	6½d.
15 ,, thirds ..	3½d.	32 ,, thirds.....	8½d.
21 ,, fourths ..	3½d.	Obscured Sheet, 15 oz.	3½d.
21 ,, thirds....	4½d.	,, ,, 21 ,,	4½d.
26 ,, fourths ..	4½d.	Fluted 15oz.6½d., 21oz.	9d.
26 ,, thirds....	6½d.	Enilled 15 oz.4½d..21oz.6½d.	

Extra price according to size and substance for squares cut from stock

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	5½d.
Rolled Sheet.....	4½d.
White Rolled Cathedral.....	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon. £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage.....	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting.....	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	6
Knotting (patent).....		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine.....		0	9	0
Oulras Black Enamel.....		0	7	0

Merchiston Castle: School's New Site.

The first stone of the new buildings which are to house Merchiston Castle School at Colinton will be laid this spring. By 1931 it is expected that the connection of the School with the old Castle site will be severed, for by that date it is hoped that the new buildings will be ready for occupation. The plans for the new buildings were finally approved by the Court of Governors on January 24. The site comprises 96 acres of park lands surrounding the Colinton House domain.

Building Trade Employment Conditions for January.

There was a further seasonal increase in the numbers unemployed during January, says the "Ministry of Labour Gazette," chiefly attributable to increasing slackness in the painting and decorating section and among carpenters; employment taken as a whole was generally slack, although it was reported as fairly good in several districts. Bad weather conditions hampered outside work and caused an appreciable amount of lost time. As regards individual occupations, employment showed a further decline with carpenters and was slack in most districts; with bricklayers, and, to a lesser extent, with masons, there was an improvement, but employment was still slack at many centres; it was again worse with plasterers and was generally poor; it continued to decline with slaters, and was quiet, on the whole. Employment showed a further decline with painters and was bad in the majority of districts; it remained generally fair with plumbers and slack with tradesmen's labourers.

THE SCOTTISH BUILDER

INCORPORATION OF ARCHITECTS IN SCOTLAND

The monthly meeting of the Council of the Incorporation of Architects in Scotland was held at 15, Rutland-square, Edinburgh, Mr. G. P. K. Young, F.R.I.B.A., Perth, presiding. Arrangements for the annual conference, to be held in Edinburgh on June 1 and 2 next, were discussed. Messrs. G. P. K. Young, F.R.I.B.A., Perth; J. K. Hunter, F.R.I.B.A., Ayr; F. C. Mears, F.R.I.B.A., Edinburgh; and J. B. Nicol, F.R.I.B.A., Aberdeen, were appointed as the four representatives of Allied Societies in Scotland to the R.I.B.A. Council, London, for session 1928-29. Mr. Peter Sinclair, 305, Wellesley-road, Methil, was elected as Fellow; and Messrs. W. W. Sibbald, 7, St. Charlotte-street, Edinburgh; W. G. Weir, 256, West George-street, Glasgow; and J. S. Houston, 163, St. Vincent-street, Glasgow, were elected as Associates; while Messrs. G. M. Thomson and R. S. Scott, both of 60, Castle-street, Edinburgh, were elected student members of the Incorporation.

NEW BUILDINGS IN SCOTLAND

Burntisland.—Houses.—The Town Council has accepted the tender of Messrs. J. Baxter & Sons, of Dunfermline, at £20,340, for the erection of 60 houses on the Haugh housing site.

Falkirk. — Centre. —A petition and plans, submitted at the Falkirk Dean of Guild Court by the Stirlingshire Education Authority, for warrant to make alterations and additions at the Old High School, Park Street, Falkirk, at an estimated cost of £2,928, has been approved. A petition by Messrs. James Aitken and Co., Falkirk, Ltd., brewers, to make additions to the beer cellar at their brewery in Newmarket-street, at an estimated cost of £1,250, was also granted.

Edinburgh.—Steelwork.—The Electricity Committee of Edinburgh Town Council has resolved to recommend that the lowest tender for steelwork at Portobello Electric Power Station, that of £51,970, submitted by Messrs. Redpath, Brown and Co., Ltd., be accepted.

Banff.—Housing.—The Town Council have approved a recommendation of the Housing Committee to proceed with the erection of another three blocks of four houses each.

Edinburgh.—Bungalows.—The Edinburgh Dean of Guild Court has passed the following:—City of Edinburgh—reconstruction at electricity sub-station, Causewayside; Messrs. Hepburn Brothers—twelve bungalows at Meadowhouse-road, Corstorphine; Leith Ex-Servicemen's Club, Ltd.—alterations at 7, Smith's-place, Leith; Mr. John Livingstone—five bungalows at Drumbrae-road, Barnton; and Mr. James Millar—two double bungalows at Blinkbonny.

Glasgow.—Bridge.—At the Corporation meeting, the tender by Sir William Arrol and Co., amounting to £85,326, for the erection of a deck or underneath counterweight type of bridge at Cloberhill, on the Anniesland-Duntochar-road, was recommended for acceptance, subject to the approval of the L.M. and S. Railway Co. and the Ministry of Transport. It was also recommended that, subject to the approval of the Scottish Board of Health, the Housing Committee be asked to transfer to the Public Health Department ground at the south-east corner of Richard-street, and Paterson-street, Anderston, as a site for a clinic.

Builder's Election to Devon C.C.

Mr. A. Sampson, of Devon-square, has been returned unopposed to the Devon County Council as the representative for Newton Abbot East.

BUILDING TRADE WAGES IN SCOTLAND.*

The following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons';‡ Bricklayers';‡ Plasterers'.†
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1
Ayr	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Bathgate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge	1/8	1/9	1/8	1/8	1/8	—	1/6½	1/3½
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/6½	1/2
Dundee	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3
Dunfermline	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	‡1/2½ †1 3–1/3½
Edinburgh.....	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Falkirk	1 7½	1 7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/8	1/6	1/6	1/6	1/2
Galashiels	1/6½	1/7	1/6½	1/7	1/6½	1/6½	1/7	1/2
Glasgow.....	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Greenock	1/7½	1/7½	1/7	1/8½	1/7½	1/7½	1/7	1/2½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Hawick	1/7	1/7	1/7	1/7–1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Kirkcaldy	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3–1/3½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/- to 1/2
Leith	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Motherwell	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Stirling	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	1/2½
Stirlingshire..... (Eastern District)	1/8–1/10	1/8–1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
Wishaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 430.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	,, ,,	7	0
Add if in floors 6 in. thick	,, ,,	3	3
Add if in beams	,, ,,	3	9
Add if aggregate 1 : 2 : 4	,, ,,	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	,,	7	10	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	,, ,,	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	,, ,,	0	10
Axed in stocks	,, ,,	1	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	1	0
Setting ordinary register grates and stoves	each	1	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	,, ,,	5	6
Do. roofs, floors and partitions	,, ,,	6	0
Do. trusses	,, ,,	8	6

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	,,	50	0
Do. to beams	per ft. sup.	0	11
Centre for arches	,,	1	6
Gutter boards and bearers	,,	1	0

FLOORING.

		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.	—	44/6	53/-	60/6
Do. tongued and grooved	,,	—	49/-	57/6	65/-
Do. matchings	,,	45/-	51/-	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/-	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	,, ,,	3	9

DOORS.

		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	,,	2/5	2/8	2/11
Two-panel moulded both sides	,,	2/8	2/11	3/2
Four-panel Do. Do.	,,	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1½″	1¾″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	,,	1/4	1/6	1/9
Add if cross-tongued	,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	,,	19	0
Do. stanchions	,,	21	9
In roof work	,,	27	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	,,	1/9	2/-	2/6	3/3
Rain-water pipes with ears	,,	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	,,	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	,,	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	41	6
Do. Do. in flats	,,	40	6
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	3

		½″	¾″	1″	1¼″	2″	4″
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	,,	1/8	2/2	2/7	3/10	—	—
Do. soil	,,	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	,,	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	,,	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	,,	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	,,	—	—	—	14/7	19/6	—
Bib cocks and joints	,,	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	,,	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard. sup.	2	6
Do. Do. Sirapite	,, ,,	2	9
Do. Do. Keen's	,, ,,	4	0
Add saw lathing	,, ,,	1	7
Add metal lathing	,, ,,	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	,, ,,	1	0
Obscured sheet	,, ,,	1	1
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10½
¼-in. wired cast plate	,, ,,	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployments Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TRADE NEWS

"The Sprinkler Bulletin."

The quarterly issue of this little journal describes the fittings for the "Grinnell" sprinkler system in force at various printing works, together with a paper read by Mr. R. C. Hazell before the Federation of Master Printers. There are some interesting paragraphs relating to the ideal fireproof methods of constructing printing premises.

Washable Distemper Water-paint.

We learn that "Calcarium," the washable distemper water-paint, a product of A. T. Morse Sons & Co., Ltd., of Plaistow, E.13, has been used for the following exhibits at the Ideal Home Exhibition:—The Universal Housing Co.'s "Sun Bath" House; the £1,750 Concrete House (architect, Mr. T. S. Tait, F.R.I.B.A.); the £750 Concrete House (architects, Messrs. Brown & Peek).

Roofing Tiles.

We learn that the Valk Roofing Tiles, Ltd., whose factory was burnt down last year, have had it entirely rebuilt and brought up to date. The building is of ferro-concrete construction, and there is no likelihood of fire occurring again. The new factory has been provided with the latest drying equipment, and we learn that it is now as fine a works of its type as exists in Europe. Concentration will be made upon the "Falcon" brand tiles. Good deliveries can be given for almost any quantity, for the present output is approximately 15 million tiles per annum.

Steel Structures.

Messrs. Fredk. Braby & Co., Ltd., of Glasgow, are issuing a new catalogue, in which are illustrated a few of the many steelwork structures for which they have been responsible. This firm designs steelwork for all types of factory and plant, stations, footbridges, crane girders, road bridges, garages; while one of their most recent works has been the new film studios at Elstree. The catalogue also contains a complete explanation of the Braby Steel "Standard-Unit" method of construction. It will be sent upon application to Eclipse Works, Petershill-road, Glasgow.

An Insulating and Building Board.

The evolution of Celotex is an example of the truth of the old proverb that "necessity is the mother of invention." The decrease year by year of the world's supply of timber and also the distance of the source of supply to the place of use (which automatically increased the cost to the actual home builder) made it imperative that a substitute should be found. After every source had been probed by scientific research, the fibre of the sugar cane was found to have all the essential properties required, *i.e.*, it is one of the strongest vegetable fibres known, it does not rot, it is vermin-proof, difficult to burn and, owing to its texture, the fibres become closely woven and interlocked when felted. It is the purpose of the Celotex Company of Great Britain, Ltd., to erect factories (beginning in Australia) in all parts of the Empire where sugar-cane is grown. These factories will ensure employment for many hands at these sites and ensure the production of a material that will provide the means of building healthy and comfortable homes for the citizens of the homeland.

Portable Asphalt Plant.

We learn that the County Council of the West Riding of Yorkshire have placed an order with Millars' Machinery Co., Ltd., for a Millars' Portable Asphalt Plant, 10 tons per hour capacity, together with melting tanks and accessories.

"History of Architecture."

Sir Banister Fletcher has just completed the revision of his "History of Architecture on the Comparative Method," and the work will be published in an eighth edition during March by Messrs. B. T. Batsford, Ltd. It includes, among the new illustrations, restorations of classic cities.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.

- *** Denotes *accepted*.**
- **† Denotes *provisionally accepted*.**
- **‡ Denotes *recommended for acceptance*.**
- **§ Denotes *accepted subject to modifications*.**

Ashford.—28 houses at Woothorpe-road, for the Staines R.D.C.:—

*Messrs. Blackwell & Mayer £10,527

Atherton.—34 non-parlour type houses on the Wag Fold estate, Atherton. Borough Surveyor:—

*J. Chapman & Sons, Manchester.

Bangor.—Lavatories.—At Ballyholme, for the T.C. Mr. Geo. H. Fleming, Borough Surveyor:—

*J. Gillespie, Bangor.

Barnsley.—Painting at the United Methodist Church, Blucher-street. Mr. A. E. Ashworth, 165, Park-grove:—

*Wm. Beaumont, Barnsley £104

Bingley.—Additions to the Bingley Morton, Shipley and Keighley Building Society, Wellington-street. Mr. F. Atkinson, architect, Old Bank-chambers, Main-street:—

*D. Wildman & Son, Eldwick, near Bingley.

Carpenters—
*H. Bailey, Park-road, Bingley.

Slaters—
*E. Hillam, Bradford.

Plumbers—
*Bentley & Bailey, Bingley.

Plasterers—
*H. Sugden & Co., Bradford.

Ventilating Engineers—
*P. M. Walker & Co., Halifax.

Steel Reinforced Floors—
*Trussed Concrete Steel Co., Ltd., London.

Bingley.—Garage, for Mr. L. Butterfield. Mr. J. Foulds, architect, King's-court, Main-street:—

*W. & S. Bradley, Bingley.

Carpenters—
*Rhodes & Scott, Bingley.

Plumbers—
*P. Astley, Bingley.

Blackburn.—Bridge over the Leeds and Liverpool Canal at Hall-street, for the C.B. Mr. H. M. Webb, Borough and Water Engineer:—

*Norwest Construction Co., Ltd., Liverpool.

Bolton.—22 houses on the March Farm estate, Little Lever. Borough Surveyor:—

*G. & J. Seddon, Little Hulton.

Brighton.—Erection of Clyde Arms Hotel, Kemp Town, Brighton. Messrs. Denman & Son, architects:—

*Ringmer Building Works.

Bury.—Second part of the work under their Barlow Trustees' Extension Scheme, at the Nurses' Hostel and for the kitchen extensions, etc.:—

*John Tinline, Ltd., Bury	£16,140	0	0
Heating—			
*Ashwell & Nesbit, Manchester	1,326	0	0
Lighting—			
*Bury Heating & Lighting Co., Bury	191	1	9

ESTIMATING ON RIGHT LINES

Everyone whose business it is to quote for building work should master the principles upon which estimating is based. These principles are clearly explained and illustrated in

'HOW TO ESTIMATE'

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a unique and invaluable work which is not excelled in thoroughness or in scope by any similar book known.

Fourth edition (now ready). 540 pages. Price 15s. net (by post 15s. 9d.). Containing thousands of prices and hundreds of examples of analysis, showing how a builder can make up rates for himself. In view of the difficulty of fixing standard prices under present conditions, the author has included an important series of Adaptation Tables and Percentages *which show how rates may be adjusted to meet variations at any time*.

Before purchasing any other book on this vitally important subject, you are invited to inspect this—the standard work which is in use by over 30,000 builders.

A Copy will be sent by return, and your Remittance refunded if the Book does : : not satisfy your requirements : :

B. T. BATSFORD, LTD.
Publishers, 94 High Holborn, London, W.C.

Burntisland.—60 houses in sixth development of Haugh housing scheme, for the T.C. Mr. J. A. Waddell, Borough Surveyor:—

William Swan, Leith	£24,208	10	0
Andrew Wilson, Rosyth	23,799	16	0
R. Terras, junr., East Weymss	21,582	8	6
Street & Co., Dunfermline	21,482	15	0
John Dennis & Co., Ltd., Dalkeith	21,123	3	6½
John M. Reid, Crossgates	20,895	5	2
D. Anderson & Askew, Dunfermline	20,459	8	4
Alexander Fraser, Kirkcaldy ...	20,398	14	8
*John Baxter & Sons, Dunfermline	20,341	6	10½

Canterbury.—Extensions to the boiler house, and for building work in connection with the erection of new heating hot water supply and other plant, at the Poor Law Institution and Infirmary, for the B.G. Mr. H. C. Ashenden, A.R.I.B.A., architect, 29, St. Peter's-street:—

J. B. Barton & Co., Whitstable	£1,704	0	0
J. E. Wiltshier Co., Canterbury	1,387	0	0
Cox Bros., Maidstone	1,384	0	0
R. J. Barwick, Dover	1,378	17	1
J. B. Sharman, Ltd., Ramsgate	1,370	0	0
K. H. Williams & Co., Margate	1,226	0	0
C. H. W. Kenworthy & Co., Herne Bay	1,173	9	0
G. Browning, Canterbury	1,157	0	0
McConnell & Co., Canterbury ...	1,136	8	11
†Hammond, Boagey & Co., Canterbury	996	0	0

Caernarvon.—New house at Caernarvon. Mr. W. W. Jones, architect and surveyor, Bryn Afon, Caernarvon:—

W. Evans & Son, Pentraeth	£793
John Roberts, Rhosbodrane	789
* O. Williams & Son, Caernarvon	782

Chelmsford.—56 houses, for the T.C.:—

‡F. H. Stewart, Little Waltham £19,767 7 10

Church Stretton.—12 non-parlour-type houses, for the U.D.C. Mr. E. J. Marsh, architect and surveyor, Church Stretton:—

Nicholls Bros., Shrewsbury	£5,998	0	
J. Bromley, Church Stretton	5,580	0	
Murray & England, Wolverhampton	5,575	0	
W. A. Sherratt, Church Stretton ...	5,253	13	
J. Griffiths, Shrewsbury	5,100	0	
J. Richards, Knighton	5,100	0	
J. Vaughan, Oswestry	5,093	0	
*H. Breese, Clun, Salop	4,914	0	
W. Higley, Shrewsbury	4,883	0	

Cirencester.—10 houses at South Cerney, for the R.D.C.:—

*Yells, Bros., Fairford £3,780

Croydon.—Erection of sub-stations, for the C.B.:—

Craignish-avenue sub-station—
*R. Mansell £427

Canham-road sub-station—
*G. Poulton & Sons 173

Penrith-road sub-station—
*R. Mansell 177

Croydon.—Extension of Headcorn-road sub-station, for the C.B.:—

J. Smith & Sons, Ltd.	£570	0	
Grace & Marsh, Ltd.	498	0	
E. H. Smith	495	0	
W. Akers & Co., Ltd.	479	0	
G. Poulton & Sons	475	0	
D. Waller	449	10	
R. Mansell	447	0	
*Truett & Steel, Ltd.	435	0	

(All of London.)

Croydon.—Extension of the ladies' slipper baths, and for alterations to the laundry, at the Croydon baths, for the C.B.:—

*J. Crewdson, Horley £3,447
(Subject to M.H. approval.)

Croydon.—106 dwellings on Mitcham-road housing estate, for the C.B.:—

*C. J. Doyle, Liverpool £38,341 10

Croydon.—Two cooling towers, for the C.B.:—

*Film Cooling Towers, Ltd. £5,509

Coulsdon.—Lavatory accommodation at the Rotary Playing Fields, for the U.D.C.:—

*C. L. G. Morgan, Croydon £531 10 8

East Westmorland.—80 tons of 4-in. and 3-in. cast-iron spigot and socket pipes, together with all bends, tee pieces, tapers and other specials, also for excavating trenches and hauling, laying, jointing and hydraulically testing about 3,900 yards of 4-in. and 3-in. cast-iron pipes, together with the provision and fixing of a meter, valves, hydrants, etc., and construction of a small reservoir, situated at Marblescar, and other works incidental thereto, for the R.D.C. Messrs. Taylor & Wallin, engineers, Commercial Union Buildings, 47, Pilgrim-street, Newcastle-on-Tyne:—

Cleghorn & Co., Carlisle	£3,603
Jackson Bros., Penrith	3,438
J. W. White, Sunderland	3,436
McLaren & Co., Belford	3,209
F. Holmes & Co., North Shields	2,989
Wm. Watson, Haltwhistle	2,842
David Thomson & Sons, Carlisle	2,831
Wm. Jackson, Edinburgh	2,691
W. Elliott, Bishop Auckland	2,625
*J. Pearson, Ltd., Stainton	2,517

Epping.—14 houses at Hobbs Cross-road, and 8 at Potter-street, for the R.D.C.:—
*H. G. Acres, Shelley £7,100

Eyemouth.—Tank to hold 67,000 gallons, also providing and laying about 960 yards of 4-in. diameter cast-iron main, and building foundations and house for small pump, and relative works, for the T.C. Messrs. Hunter, Duff & Middleton, civil engineers, 42, Frederick-street, Edinburgh:—
*A. A. Stuart, Glasgow.

Ffaldau.—Handicraft centre, at the Ffaldau Council School, for the Glamorgan E.C. Mr. D. Pugh-Jones, F.R.I.B.A., County Architect, Cardiff:—
*W. A. Jones, Llantwit Major ... £753 10 9

Gravesend.—Repairs and redecorations to Church-street Council school, for the E.C. Mr. J. G. Bennett, L.R.I.B.A., architect, 5, Woodville-terrace:—
*R. Hopkins & Sons, Gravesend £230

Gunnersbury.—Repairs and decorations to Mansions, Temple and Outbuildings at Gunnersbury Park, for the Committee. Mr. W. G. Cross, Borough Engineer:—

L. L. Leeder & Co.	£3,064	19	11
Bollom & Sons	2,687	0	0
Thorogood Bros. & Son	2,609	12	4
G. Challis & Co., Ltd.	2,315	1	9
*W. H. Cooper & Son	2,198	0	0

(All of London.)

Heckmondwike.—Reconstruction of roof lights at the Council Public Baths, for the U.D.C.:—
*Hy. Hope & Sons, Ltd. £385 0 0

Highweek.—Alterations and additions at Highweek School, Newton Abbot, for the Devon E.C.:—
Coleman & Co., Exeter £4,999 10

Holywell.—New rating offices in Holywell:—
*T. Warrington & Sons, Ltd., Ellesmere Port £3,656

Horsham.—96 houses on the Millthorpe estate, Littlehaven-lane, Roffey, for the U.D.C. Mr. C. G. Atkinson, surveyor:—
*Newman & Co., Cardiff £37,720

Houghton-le-Spring.—Houses, for the R.D.C, as follows:—East Rainton site, 14; New Herrington site, 4; Dubmire site, 16. Mr. B. Richardson, surveyor:—
Herrington—
*George McCall, New Herrington £1,280
East Rainton—
George McCall, New Herrington 4,540
Dubmire—
*George Cairns & Sons, New Herrington 5,102

Hoyland.—Houses and business premises at Hoyland Common, near Barnsley. Mr. J. R. Wilkinson, L.R.I.B.A., architect, 15, Regent-street, Barnsley:—
*P. W. Mell, Hoyland.

Hyde.—Extensions to the mill premises, for Messrs. Mayall & Massey, Ltd. Messrs. Potts & Hennings, architects, 34, Victoria-buildings, Victoria-street, Manchester:—
*Wm. Gornall & Sons, Ltd., Salford.

London.—Steel windows of various sizes for buildings in course of erection on the Milk Yard site, for the Stepney B.C.:—
*Standard Metal Window Co., London £224 1 5

London.—Proposed alterations to the existing Wesleyan Central Hall, Lambeth-road, Lambeth, S.E.11, for the South West London Mission (Rev. Thomas Tiplady, Superintendent). Mr. William M. Weir, F.R.I.B.A., architect, 17, Victoria-st., S.W.1:—

Somerford & Sons, Ltd.	£7,269
H. Bragg & Sons, Ltd.	7,187
Y. J. Lovell & Son	6,943
Geo. Brittain & Sons, Ltd.	6,927
C. H. Gibson, Ltd.	6,825
Dave Bros., Ltd.	6,775
Geo. Parker & Sons, Ltd.	6,676
*Bridge & Co.	6,549

(All of London.)

London.—School in Charlton-road, for Rev. Henry Julian. Mr. F. A. Walters, architect, 28, Gt. Ormond-street, W.C.1:—
*Mills & Sons, Ltd., Westcombe Heath.

London.—Construction of wells, caissons, in the River Thames, circulating water tubes, etc., at Limehouse Electricity Generating Station, Narrow-street, E., for the Stepney B.C. Mr. B. J. Belsher, F.R.I.B.A., Borough Engineer and Surveyor:—

C. Brand & Son	£85,200	0	0
Melville, Dundas & Whitson, Glasgow	80,254	0	0
J. Mowlem & Co., Ltd.	79,000	0	0
W. Muirhead, Macdonald Wilson & Co.	75,500	0	0
Perry & Co. (Bow), Ltd.	57,386	15	10
Walter Scott & Middleton, Ltd.	56,953	0	0
Walter Jones & Sons, Ltd.	55,075	0	0
Kinnear, Moodie & Co.	53,576	0	0
J. Cochrane & Sons, Ltd.	48,028	0	0
*The Foundation Co., Ltd.	38,250	0	0

(All of London.)

London.—Repairs to the Long Wall at Abbey Mills pumping station, for the L.C.C.:—
*C. J. Wills & Sons, Ltd.

London.—Provision of low-pressure hot-water apparatus at Streatham-vale school, for the L.C.C.:—

John Metcalf, Ltd.	£1,440
Davis, Bennett & Co.	1,246
B. Finch & Co., Ltd.	1,143
H. J. Cash & Co., Ltd.	1,134
Bilbie, Hobson & Co.	1,094
Wm. Freer	1,092
Saunders & Taylor, Ltd.	1,090
W. G. Cannon & Sons, Ltd.	1,080
*National Heating Co., Ltd.	1,009
Architect's estimate	1,120

(All of London.)

London.—Provision of fire-escape staircase, at the Northern Hospital, for the M.A.B.:—

T. W. Palmer & Co.	£162	0	
L. Kazak & Co.	161	0	
J. M. Dangerfield & Sons	155	0	
Light Steelwork (1925), Ltd.	146	15	
Falkus (Public Works), Ltd.	139	0	
Wilmer & Sons, Ltd.	131	0	
C. H. Boyd & Son, Ltd.	127	10	
*C. A. & A. W. Haward	117	5	

(All of London.)

London.—Formation of bathroom for girls, at the S. Anne's Home, for the M.A.B.:—

A. H. Inns, Ltd., London	£167	0	0
C. H. Boyd & Son, Ltd., London	163	0	0
J. Neaves & Son, Sturry	139	1	0
J. Hocking & Co., Charlton	137	8	9
N. Smith & Son, Maidstone	133	0	0
C. W. Welby, Herne Bay	125	0	0
J. B. Sharman, Ltd., Ramsgate	118	0	0
Operative Builders & Decorators, Ltd., Birchington	118	0	0
B. Cane & Son, Herne Bay	118	0	0
P. Miller & Son, Dartford	112	5	0
*K. H. Williams & Co., Margate	108	0	0

London.—Conversion of curtain cubicles into wooden cubicles, etc., at the Sheffield-st. Hospital, for the M.A.B.:—

J. Hocking & Co.	365	0	0
L. Kazak & Co.	345	0	0
E. Proctor & Sons	315	0	0
Falkus (Public Works), Ltd.	302	0	0
A. H. Inns, Ltd.	287	0	0
J. Appleby & Sons, Ltd.	269	18	0
P. Jones & Co. *	262	18	8
J. Darch, Ltd.	259	0	0
C. H. Boyd & Son, Ltd.	246	0	0
Johns Bros.	235	0	0
*Carrington, Thomas & Co., Ltd.	172	0	0

(All of London.)

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FOR FACTORIES, GARAGES, SCHOOLS, ETC.,

Nine essential features of "Henderson" Door Gear

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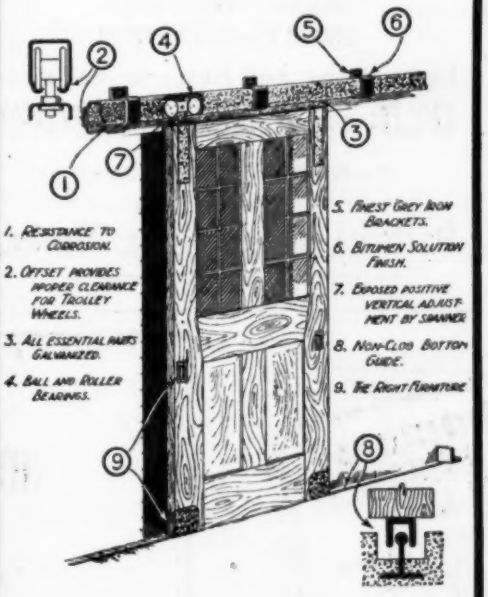
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WRITE FOR BOUND CATALOGUE B26 TO

P. C. HENDERSON, LIMITED.

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London.—New buildings in Little Tichfield-street, W.1, for governors of Regent-street Polytechnic. Mr. F. J. Wills, F.R.I.B.A., architect, 62, Oxford-street, W.1.:—
Builders—
*Bovis, Ltd.
Steelwork—
*Dorman, Long & Co.

London.—Cleaning, painting and repairs, at the S. Anne's Home, for the M.A.B.:—

G. Forster, Ramsgate	£665	2	8
A. Bagnall & Sons, Ltd., Shipley	440	0	0
B. Cane & Son, Herne Bay	404	15	6
N. Smith & Son, Maidstone	404	0	0
Rice & Son, Margate	397	0	0
J. Neaves & Son, Sturry	393	11	0
C. W. Welby, Herne Bay	387	0	0
C. H. Boyd & Son, Ltd., Paddington	386	0	0
Hammond, Boagey & Co., Ltd., Canterbury	379	0	0
A. H. Inns, Ltd., Holborn	377	0	0
Lilley & Sons, Clapham	373	0	0
K. H. Williams & Co., Margate	362	0	0
C. H. H. Kenworthy, Herne Bay	357	11	0
Operative Builders & Decorators, Ltd., Birchington	346	0	0
J. Hocking & Co., Charlton	333	0	0
J. B. Sharman, Ltd., Ramsgate	330	0	0
P. Miller & Son, Dartford	328	0	0
F. J. Terry, Deal	299	10	0
F. Firth, Shipley	289	0	0
*C. Crouch & Son, Herne Bay	220	0	0

London.—Certain interior decorative repairs at the Dulwich Baths, for the Camberwell B.C.:—

Franks & Simons	£1,347	4	3
E. D. Winn & Co., Ltd.	1,301	1	0
C. J. Jones	1,139	17	7
Byfield & Co.	1,055	4	6
E. C. Sames & Co.	1,018	13	11
Falkus Bros.	1,014	1	9
White & Sons	958	0	4
Wm. Bailey & Sons, Ltd.	948	0	0
W. Sanford	946	14	3
B. Sparkes & Co.	938	11	8
Burnand & Pickett	933	11	5
Sabey & Son	933	6	7
R. Mansell	879	6	6
W. Bickerton	863	6	1
Paintspray, Ltd.	844	14	2
W. G. Beaumont & Son, Ltd.	834	19	3
A. H. Juno, Ltd.	799	16	6
H. W. Yates, Sunningdale	789	0	0
David W. Beck	780	4	0
Mond Staffordshire Refining Co.	779	7	4
W. Stamper	755	15	8
A. O. Newman, Ltd.	745	19	3
W. Chappell & Co., Ltd.	696	18	9
*Frank Flint, Sheffield	567	7	8

(All of London.)

London.—Repairing of the roof of the small Town Hall, Hampstead, for the B.C.:—
*W. Willett, Ltd., London £389

London.—Extensions at the headquarters, Tavistock-square, W.C., for British Medical Association. Mr. C. Wontner-Smith, F.R.I.B.A., architect, 2, Gray's Inn-square, W.C.1:—
*Ford & Walton, Ltd., London (approx.) £300,000

Maidstone.—Erection of the new Grammar School for Boys in Barton-road, for the Kent C.C. Major W. H. Robinson, F.R.I.B.A., County Education Architect:—

James Bodle, Ltd., Eastbourne	£51,543	0	0
C. H. H. Kenworthy, Herne Bay	50,111	5	0
S. E. Moss, Southend	50,000	0	0
William F. Blay, Ltd., Dartford	49,700	0	0
H. Friday & Sons, Erith	49,001	12	4
G. H. Denne & Son, Deal	48,865	0	0
J. W. Ellingham, Ltd., Dartford	48,748	0	0
J. E. Billings & Co., Ltd., London	48,746	0	0
D. Godden & Son, Ashford	48,656	0	0
W. T. Burrows & Son, Maidstone	48,377	0	0
G. Gates & Sons, Rochester	48,353	0	0
S. Brand & Co., Sheerness	48,115	0	0
R. J. Barwick, Dover	47,990	5	3
H. J. & A. Wright, Ltd., Great Missenden	47,312	0	0
G. Coe, Chislehurst	47,240	0	0
G. E. Wallis & Sons, Ltd., Maidstone	46,780	0	0
R. Corben & Son, Maidstone	46,592	0	0
John B. Sharman, Ltd., Ramsgate	46,550	0	0
W. W. Martin, Ramsgate	46,466	0	0
Jenner & Son, Folkestone	46,203	0	0
Unic Contractors, Ltd., Whitstable	46,124	0	0
E. W. Winn & Co., Ltd., London	45,990	0	0
J. A. Davison & Son, West Malling	45,884	0	0
C. E. Skinner & Son, Ltd., Chatham	45,857	0	0
A. E. Tong, Gravesend	45,660	0	0
J. Elliman & Son, Ltd., Beckenham	44,993	0	0
Whiting Bros., Ospringe	44,918	0	0
Norman Smith & Son, Maidstone	44,624	0	0
‡Cox Bros., Maidstone	41,501	0	0

Morecambe.—3 pairs semi-detached houses at White Lund Depot, Torrisholme, Moss-lane, for the Corporation. Mr. P. W. Ladmore, Borough Surveyor:—
*Edmondson Bros. (Morecambe), Ltd., Morecambe.

Nelson.—Handicraft and domestic science centre, for the Glamorgan E.C. Mr. D. Pugh-Jones, F.R.I.B.A., County Architect, Cardiff:—
*T. James, Ystradmynach £2,570 4 10

Newport (Mon.).—Omnibus garage at the East Power Station, for the C.B.:—
Building work—
*J. H. Williams £3,893 9 1
Structural steelwork and covering—
*Braithwaite & Co., Engineers, Ltd. £3,820

Ossett (Yorks).—Renovating the Croft House Welfare centre and clinic, for the T.C.:—
*A. Wilkinson £239 7

Plymouth.—Alterations and additions at High School for Boys, and for laboratory fittings, for the C.B.:—
*Pearce Bros. £1,049 15

Pwllheli. — Concrete walls, new screening chambers, outlet pipes and other improvements at Murcwymp and Glasfryn springs; and providing, hauling, laying and jointing of about 2,000 yards of 6-in. and 4-in. cast-iron spigot and socket water pipes, together with all sluice valves, air valves, fittings, and other works connected therewith, for the Corporation. Mr. C. F. Farrington, engineer, Trinity-square, Llandudno:—

Christiani & Nielsen, London ...	£4,290	2	9
J. H. Roberts, Pwllheli	4,247	8	0
Daniel Owen, Pwllheli	3,987	0	0
T. Bugbird & Son, Stamford	3,950	0	0
H. Coxhead & Co., Birmingham	3,658	15	7
J. Byrom, Ltd., Bury, Lancs. ...	3,092	0	0
Wyatt Bros., Whitchurch	2,978	0	0
*Owen Parry, Pwllheli	2,623	6	8

Salford.—Re-wiring of the electrical installation at 139 and 145, Regent-road, for the C.B.:—
*J. W. France & Co., Manchester £104

Salford.—Sewer works in Weaste-lane, Pendleton, from Liverpool-street to opposite "Beechfield," for the C.B.:—
*G. Clarke & Sons (Manchester), Ltd., Manchester £12,948 5 0

Slaithwaite.—Construction of storm overflow chamber, storm water tanks, sludge drainers, drying area, pump well, roadway, drains, etc., for the U.D.C. Messrs. C. H. Marriott, Son & Shaw, engineers, Church-street Chambers, Dewsbury:—

A. Graham, Sons & Co., Ltd., Clayton West	£1,821	2	8
J. Winpenny & Co., Linthwaite	1,616	14	3
S. Johnson & Son, Ltd., Mirfield	1,613	4	11
Walker & Crossley, Huddersfield	1,416	19	3
G. Horsfall & Son, Liversedge	1,416	10	7
Hall & Busfield, Ltd., Leeds ...	1,396	4	10
S. & G. Graham, Huddersfield ...	1,345	13	7
Wm. Holroyd & Sons, Slaithwaite	1,300	12	0
Abm. Graham, Huddersfield ...	1,300	0	0
S. & L. Sykes, Golcar	1,294	15	2
J. Horkin & Sons, Liversedge	1,189	11	0
*J. G. Pearson, Dewsbury	1,166	16	3

Southerham.—Alterations to the "Fox Inn." Mr A. B. Packham, architect:—
*Ringmer Building Works.

Thornbury.—12 houses at Over, Almonsbury, for the R.D.C.:—
*F. G. Ranger, Yate £3,723

Thornbury.—Six houses at Berrycroft, for the R.D.C.:—
*E. W. Dimery & Son, Wanswell £2,037

Walmer.—House, for Mr. W. Dodd. Mr. C. E. Hanscomb, F.R.I.B.A., architect, Station Approach, Sanderstead:—

Jas. Bodle, Ltd.	£3,355
A. A. Cavell & Sons	3,106
T. T. Denne	2,945
G. H. Denne & Son	2,746
‡A. W. Thompson & Son, Walmer	2,565

Warrington.—New church hall on land facing Ellesmere-road, for the Parochial Committee. Messrs. W. & Segar Owen, F.R.I.B.A., architects, Palmyra-chambers:—
*A. Swinton, Warrington £3,125

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